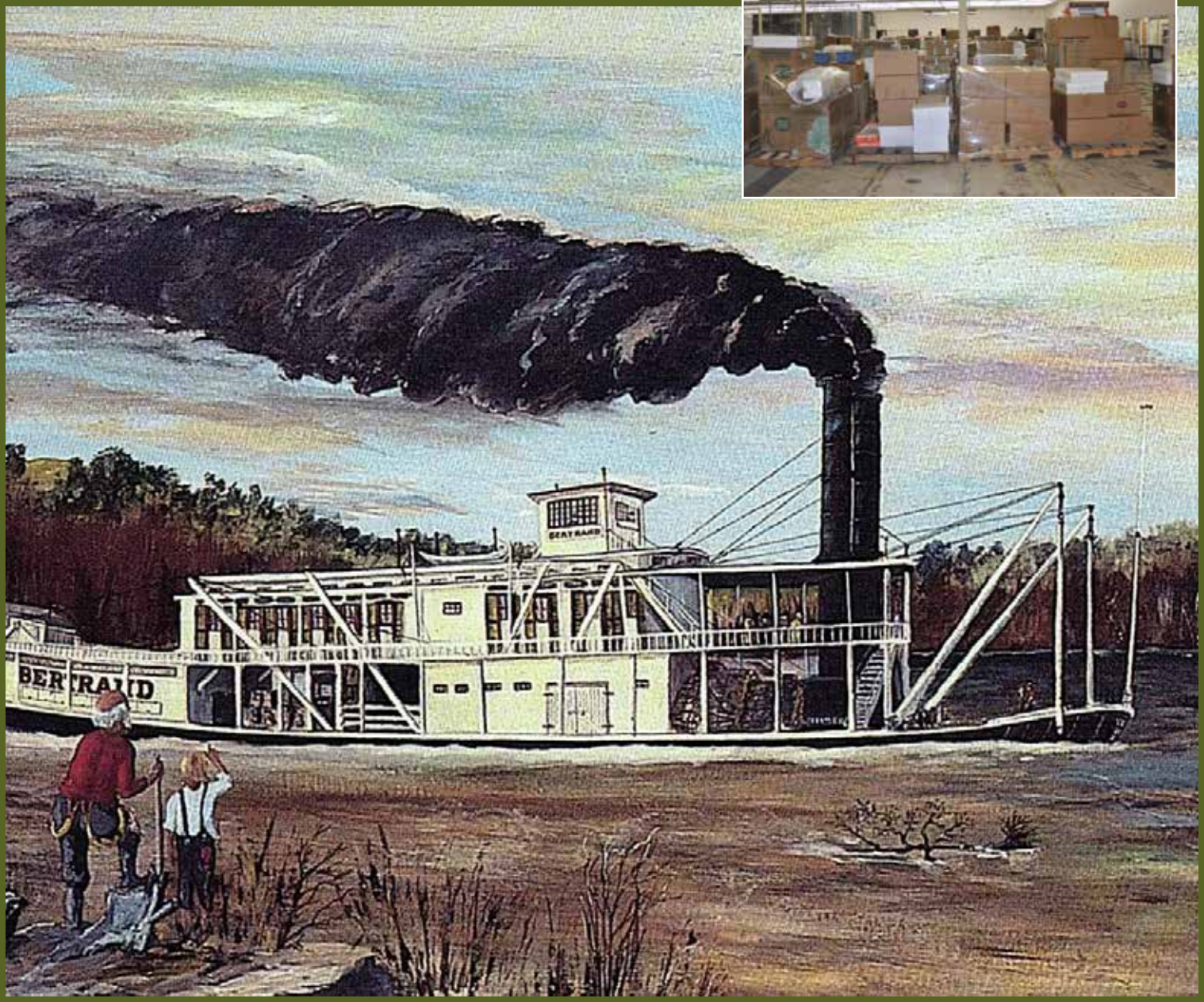
U.S. Fish & Wildlife Service

Annual Report of Cultural Resources Management in the U.S. Fish and Wildlife Service

Fiscal Year 2011



Cover Photo: Artist rendition of the Steamboat Bertrand. (USFWS)

Inset: Bertrand collection in its temporary storage after having to be moved because of flooding along the Missouri River in 2011. (USFWS)

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Foreword

Brad Knudsen

During my 30 year career with the U.S. Fish and Wildlife Service, I have had the privilege of working at six different national wildlife refuges in three different Regions. The vast majority of my exposure to cultural and archaeological resource management consisted of routine coordination with State Historic Preservation Offices and Regional Office Historic Preservation staff, ensuring cultural resources were not in the line of fire for wetland restoration activities, building site construction, clean-up of old farmsites, etc. With rare exceptions, proposed projects went forward as planned.

My exposure to cultural and archaeological resource management became anything but routine upon coming to Patuxent Research Refuge as refuge manager in August 2000. Before I left my cozy little cubicle within the Division of Refuges in Arlington, Virginia, I was told that Patuxent has the most challenging cultural resource issues of any refuge in the National Wildlife Refuge System. I took the comment to heart, while being quite curious as to why. After eleven years as project leader here, I think I can venture a few guesses as to why. Here are my guesses, not necessarily in any priority order:

1) Patuxent has a number of buildings and associated structures that have been found to be eligible for listing on the National Register of Historic Places – 59 to be exact. These include office/lab buildings constructed in the late 1930's, still being used today by the FWS' Division of Migratory Bird Management, and until recently, the U.S. Geological Survey's Patuxent Wildlife Research Center staff. Many of these structures were also found to be "contributing" to three Historic Districts established on the refuge in 2007. These included such unusual assets as corn cribs, chicken coops, and old wellhouses, all utilized during Patuxent's early years of research on wildlife-friendly agricultural practices. In consultation with the SHPO, over half of the 59 historic-eligible assets have been identified for demolition, after proper recordation has taken place. These were, for the most part, smaller structures (the afore-mentioned corn cribs, for instance), and other assets that were no longer useable, and were in various stages of disrepair. In addition to the required recordation, we also formulated a mitigation plan with SHPO, to include developing new displays and a DVD available at our National Wildlife Visitor Center, highlighting the history of Patuxent, and how various buildings/locations contributed to the wildlife research conducted here over the years.

2) Continued occupancy and adaptive reuse of buildings such as Nelson and Merriam Labs, originally constructed 70-plus years ago, and keeping them compliant with present-day safety and health regulations is a challenge in and of itself. For those buildings we continue to actively use and/or keep in protected status, maintenance needs are so daunting and so commonly needed, we have recently signed an MOU with the MD SHPO to streamline the consultation process, hopefully allowing for timelier, cost-effective, and appropriate repairs/modifications. The MOU covers indoor and outdoor maintenance, stair treads and roofs, mortar work and painting, HVAC systems and chimney repairs. The level of consultation needed is intended to be commensurate with the complexity and/or extent of the specific maintenance work planned.

3) Not only are we concerned with the asset itself, and its proper long-term care and feeding, but we also have to take care that any new construction – or major repairs – does not impair the "historic atmosphere" of the surrounding viewshed. I think of it as each historic-eligible asset having a "sphere of influence" around it. This concept within the historic districts and near other historic-eligible assets definitely influences what we build, where we build, and HOW we build. New construction

must not detract from the historic nature of the surrounding environment. Sometimes, vegetation screens may be recommended – generally not a problem where sweetgum trees grow five feet per growing season, but it is a consideration that we have to make.

4) Finally, of course, there are the archaeological resources present in the ground – some over 10,000 years old – we need to protect. There are 41 known archaeological sites registered with the Maryland Historical Trust, and several other potential sites within the refuge boundary. An archaeological assessment completed in May 2011 as part of our Comprehensive Conservation Planning process cites the "heritage surviving at the refuge includes a material culture chronicling Native American culture, initial settlement of the area by Europeans, native American response to European settlement, plantation society, military history, post-Civil war rural agriculture, and 20th century federal government research" (Richard Grubb and Associates, Inc., Cranbury, NJ). This report also states these archaeological resources contribute to our understanding of state, regional, and national prehistory and history.

Thanks to strong Congressional support, Patuxent has been fortunate to receive several million dollars in the last few years through Federal Highways High Priority Projects, American Reinvestment and Recovery Act funds, and other construction-related funding – for road repairs, connections to public sewer and water, new residences, etc. These projects all entailed ground disturbance, and therefore, required Level I Archaeological surveys – at great expense and sometimes causing delays in project implementation, which, of course, can lead to frustration.

Sometimes, to deal with this frustration, I think back to a presentation I heard at an annual meeting of the National Association of Conservation Districts, given by a private landowner from southern Indiana. He was addressing the importance of wildlife habitat restoration projects on private lands. He said not long after completing a wetland restoration on his farm, some swamp rattlesnakes – a federally listed endangered species – moved onto his property to this newfound wetland habitat. He went on to say he considered it a "badge of honor" that his farm now provided habitat for an endangered species. As refuge managers and biologists, it is easy for our passions to be ignited when we are helping an endangered species, even though sometimes it may add cost and time to a project – just as some cultural resource consultations/protection measures do. I know I am not always as "forgiving" when time delays or increased costs occur as a result of our clear mandates to protect, preserve, and interpret our cultural resources on refuges. But I do think back to that farmer, and I try my best to make the leap that caring for and preserving historic and cultural resources from this Nation's past, is, indeed, a "badge of honor" as well.

Reprinted from Historical Happenings, August 2011

Executive Summary

Refuges are places where the people of today can renew the ties to their cultural heritage by viewing ancient and historic sites. These ties, delivered through the System's public use programs, strengthen the connection between wildlife and people."

Fulfilling the Promise 1999

For Fiscal Year 2011 each Region (figure 1) of the US Fish and Wildlife Service (hereafter USFWS or Service) has reported its cultural resources accomplishments across the following major divisions: cultural resource compliance activities (which includes compliance with Section 106 of the National Historic Preservation Act (NHPA), Archaeological Resources Protection Act (ARPA) and Native American Graves Protection and Repatriation Act (NAGPRA) data and USFWS National Register data), museum property (which includes, museum collections movement, museum collections condition, and collection repository totals). Detailed information for these divisions is included in Appendix 1. Select summary information is shown in Table 1 (page 6).

FY 2011 also saw the completion of a two year effort to prepare the first-ever workload study (WLS) for the USFWS Cultural Resources program. The report "A Workload Analysis for the US Fish and Wildlife Service Cultural Resources Program" came in response to 3 main issues:

1. Findings of deficiencies in the management of USFWS cultural resources identified in 4 major audits of USFWS museum collections, cultural items, and historic resources,

   - In July 2008 the Office of the Inspector General (OIG) initiated a review of Department of Interior (DOI) museum property management and issued a finding of poor management of museum property for both the DOI and the Service.

   - In early FY 2009 KPMG issued negative findings for USFWS for museum property, citing overall inefficient record keeping and collection deterioration. A finding was also issued for inadequate condition assessments for Landmarks and National Register Listed sites. KPMG is a global network of professional firms providing Audit, Advisory and Tax services; the audit was accomplished at the request of DOI.

   - In late FY 2009, the Government Accountability Office (GAO) announced to federal agencies its intent to conduct an audit of management practices applied to compliance with the Native American Graves Protection and Repatriation Act (NAGPRA) of 1990. This audit was the first time that such a large scale review of agency-NAGPRA management has occurred. In July of 2010, the GAO issued their report 10-768. "After Almost 20 Years, Key Federal Agencies Still Have Not Fully complied with the Act" in which they identified deficiencies with respect to federal agency execution of their responsibilities under NAGPRA.

   - In late 2011 the GAO began an audit of historic building portfolios among federal agencies and their management practices for these assets. This audit is on-going.

2. Language singling out Service cultural resources by the US House of Representatives

   House Report 111-180 – DEPARTMENT OF THE INTERIOR, ENVIRONMENT, AND RELATED AGENCIES APPROPRIATION BILL, 2010

   "The Committee believes that the Service should adequately document, protect, and manage significant cultural resources on its lands. The 150 million acre refuge system contains numerous cultural resources that can't be found anywhere else. An example of this is the ancient Chamorro cave art that must be protected at Guam National Wildlife Refuge.

Table 1. Cultural Resource Compliance and Museum Property Summaries for USFWS Regions for 2011

Cultural Resources Compliance	*R1*	*R2*	*R3*	*R4*	*R5*	*R6*	*R7*	*R8*	*Totals*
Number of completed NHPA Reviews this FY	184	90	200	122	217	480	111	205	**1,609**
Number of archeological surveys this FY	283	15	16	13	8	20	5	61	**421**
Number of acres surveyed this FY	2,694.5	200	914	38	9.5	1,000	3,000	2,232	**10,088**
Number of archeological sites this FY	44	5	13	63	1	7	58	0	**191**
Number of archeological recovery projects this FY	0	0	0	0	0	2	0	1	**3**
Total number of historic buildings or structures in the Region	188	5	9	70	203	1,275	38	53	**1,841**
Number of condition assessments for historic buildings this FY	0	1	0	4	2	0	0	0	**7**
Dollars spent on condition assessments for historic buildings this FY		0	0	$20,000	$100,000	0	0	0	**120,000**
Total Number of archaeological sites in the Region	835	430	3,553	2,396	922	1,592	3,955	1,290	**14,973**
Total Acreage surveyed for archaeological sites in the Region	0	16,500		439,750	9.5	1,000	620,000	0	**1,077,259.5**
Total number of Paelontological sites in the Region	3	1	0	1	0	571	322	2	**900**
Total number of NRHP eligible sites	0	100	17	66	14	266	3,800	0	**4,263**
Total number of NRHP sites actually listed	17	5	13	25	12	15	8	10	**105**
Total number of national monuments	5	0	0	0	0	0	1	0	**6**
Total number of national historic landmarks	1	2		1	1	0	4	2	**11**

Region federal facilities n=115	*Art*	*Archaeology*	*Ethnography*	*History*	*Archives*	*Biology*	*Paleontology*	*Geology*
1	5	10,741	1	55	20	480	166	1
2	0	0	0	0	0	2	0	0
3	102	34,695	2	577,320	9,576	1,225	66	0
4	36	12,545	4	207	28,500	366	71	0
5	417	5,453	4	1,328	37,880	6,043	63	0
6	25	100	0	15,896	73,423	0	0	0
7	11	21,000	31	28	66	7,000	200	0
8	23	739	2	31	4	210	1	0
9	0	0	0	100,000	33,400	0	0	0
Non-Federal n=183								
1	0	61,443	1	0	4	0	640	0
2	0	7	0	0	0	0	0	0
3	30	619,483	0	0	0	204	2	0
4	0	382,821	1	1	1,231,500	900	0	0
5	1	90,376	0	106	0	128	0	0
6	0	1,000,000	0	1	0	0	14,380	0
7	0	25,000	0	0	0	0	0	0
8	0	14,488	0	36	0	0	62	0
9	0	0	0	0	0	0	0	0

The Committee urges the Service to expand its work to document and protect the numerous cultural resources on its lands."

3. Recent and forthcoming workload increases for cultural resources staff

   Review requirements for National Environmental Policy Act (NEPA) have recently added workload for CR offices that are well above the historical responsibility. Some added responsibility include coordination with and response to the appropriate State Historic Preservation Officer (SHPO), with assistance from the NEPA coordinator, e.g. consultation letters and follow through, including assistance in following up with SHPO recommendations; assistance in identifying, consulting with, and follow through with Tribal Consultation, and providing scoping information for cultural resources when asked as part of internal scoping. Similarly, increased emphasis on NAGPRA will add additional work for all regions; the recently completed GAO audit will require completion of inventories, reporting, and other activities that may exceed NAGPRA workload estimates included in this analysis.

The report documents current needs of the Cultural Resources program based upon an analysis of day-to-day workload factors conducted by cultural resources staff. All Cultural Resource activities (such as compliance with NHPA, NAGPRA) and ARPA, museum property management, tribal consultation) were identified and hours expended on them by staff were recorded.

Report Findings

The WLS found that the primary driver for the Cultural Resources staff (the workload factor using the most staff and time) is providing review and compliance consultation under NHPA for USFWS programs. The number of reviews submitted to the program versus the number that staff can complete also accounts for the recommended FTE increase noted in table 2.

With Cultural Resources staff time and effort almost entirely consumed for NHPA review, other management activities, some of which are directly connected to the aforementioned audits, are largely neglected. In addition to the need for increased FTE, the WLS also notes the need for better support from the programs currently accepting service from Cultural Resource staff.

Table 2. Excerpt from WLS – Recommended staff increases*

Region	*R1*	*R2*	*R3*	*R4*	*R5*	*R6*	*R7*	*R8*	*Total*
2012 FTE Authorized	9	1	1	2	2	3	1	NA	**19**
Recommended FTE	9	3	6	5	6	6	4		**39**
80%	$632,734	$245,207	$406,247	$362,441	$422,960	$411,865	$307,198		**$2,788,651**
2012 Base	$772,000	$150,000	$166,247	$135,933	$254,663	$395.000	$217,000		**$2, 090,843**

**See appendix III for the complete report and findings.*

Around the Refuge System

Throughout 2011 USFWS cultural resources staff engaged in **Science and Research** projects that collected and used data recovered from archaeological sites. These data can be applied to larger issues, such as climate change, and can be used to help understand why a habitat has changed over time. **Training** projects help illustrate the importance of historical resources and provide guidance for their preservation to USFWS employees. **Partnership** opportunities help continue or establish corroborations between USFWS and other organizations. Tribes are an important partner when it comes to cultural resources and their cooperation is invaluable. **Education and Outreach** projects, a cornerstone of the USFWS, take on new dimension when coupled to archaeology and history. The interest people have in these subject areas connect well to larger environmental education programs already in place on Refuges. In 2011, USFWS assisted in the aftermath of flooding along the Missouri River. One impact, noted under **Special Responsibilities**, from the flooding for USFWS cultural resources concerned the archaeological collection recovered from the Steamboat Bertrand.

"We [Refuges] also strive to expand the application of science within the Refuge System beyond biological sciences and include physical, social, historical and cultural sciences in our programs and management."

Conserving the Future 2011

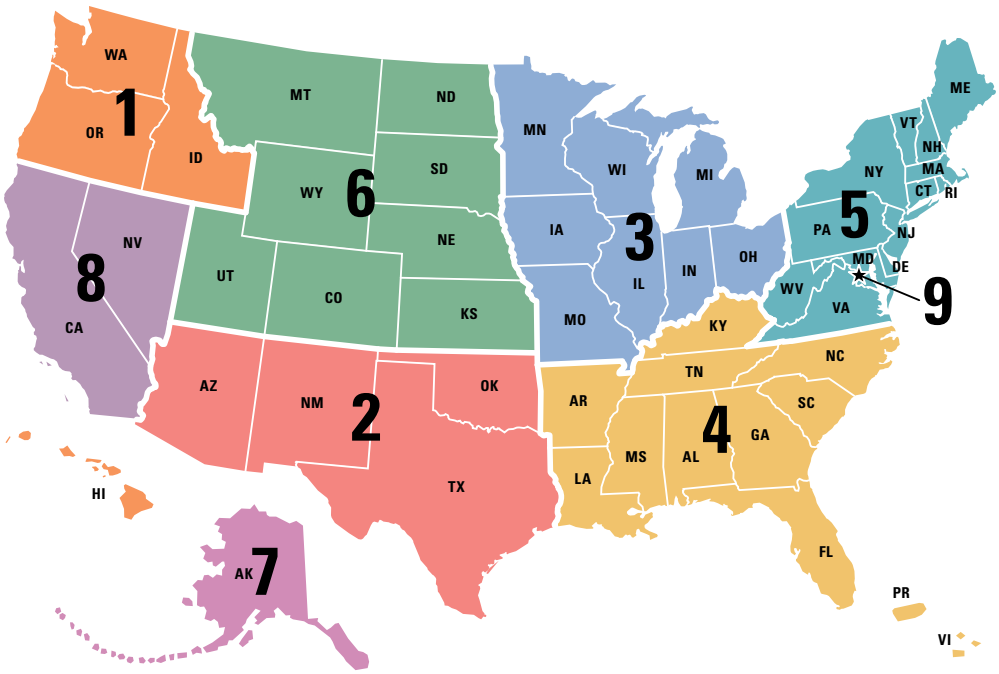


Figure 1. Regions of the US Fish and Wildlife Service

USFWS Headquarters

Education and Outreach
Through an on-going partnership with the Student Conservation Association (SCA), and with assistance from the National Parks Service Cultural Resources Diversity Internship Program (CRDIP), the USFWS headquarters was able to secure the services of two interns to conduct research on the Civilian Conservation Corps (CCC).

Kristin Rondeau-Guardiola – CRDIP Intern at USFWS Washington Office
I always had an interest in Franklin Delano Roosevelt and his two largest policies: the New Deal and the Good Neighbor Policy, which immediately drew me to this internship (figure 2). The focus of my internship at USFWS has been based on the New Deal Policy and the creation of the Civilian Conservation Corps. My goal was to assess the realm of the CCC's work on the Refuges. With my background in History and Socio-cultural Anthropology, working in the Cultural Resources Department was a perfect fit.

The focus of the CCC project was to create a database of the C's activities on the Refuges. I began researching at the Department of Interior Library, the Smithsonian Archives, NCTC, and the National Archives to get as much information as possible on the specific positions and jobs performed on the refuges. I also contacted Historical Archaeologists, Regional Archaeologists, and Refuge Managers to gain insight on the CCC activities in a specific location.

What I found was that USFWS has large amounts of data on the CCC and that the C's were responsible for the entire development of 44 refuges still in existence today. They were also responsible for development projects over the entire refuge system, with structures so well built that they are still standing to this day. For the final products I created a series of factsheets on the C's impact on the Refuges and sites that are still standing. I also created a database of all known CCC work

Figure 2. Kristin hard at work researching the CCC.

performed on Refuges, a photo archive, and co produced a map for the Cultural Resources Webpage.

After my internship I plan to return to Arizona State University to finish my final semester of Undergraduate Studies. I hope to pursue a career with the Federal Government in Cultural Resources after I attend graduate school in Anthropology. I really enjoyed this experience and working with the history of USFWS. I hope this project continues long after I leave, as I just skimmed the surface of the information and there is so much work yet to do.

Ben Garza – SCA Intern in USFWS Pacific-Northwest Region, Malheur National Wildlife Refuge (NWR)
The Malheur National Wildlife Refuge houses an extraordinary index of Civilian Conservation Corps narrative records spanning seven years of service through the refuge provided by the three CCC camps operating 1935–1942. The reports consist of monthly, quarterly, and annual reports from all three camps amassing thousands of pages of documentary narrative reports and original photography.

The Civilian Conservation Corps maintained a dynamic and all-encompassing presence throughout the duration of their service on the refuge leaving a profound impact on the refuge lands that continue to shape the present.

I wanted to develop a tool that could draw people from multiple age groups into a learning environment that could share the massive contents of these narrative documents without being overwhelming to the audience users. Given the expanses of refuge lands the three camps covered, it was decided that there should be an interactive map of sorts for the user to engage the material on the scale and magnitude at which they were actually achieved on the refuge. Much of the content was taken from the character of the narratives themselves to include a number of quotations and captions. I wanted the CCC to speak to the audience in their own words; these men had fantastic senses of humor and irony as well as a strong sense of pride and dedication to their work. I wanted to preserve the integrity of the men and their words rather than summarizing what was best said by the men themselves. The photography from the narratives, through my eyes, has the ability to speak volumes across the generations attesting to the perseverance of these young men. See Ben's work at http://www.fws.gov/malheur/ccc_interactive.html.

The world is very much a different place than then and it is of the utmost importance to illustrate the times that have come before us so that we may better appreciate the present and see the future for what it could be. In every interview I watched with former CCC enrollees; all men in their eighties and nineties, all agreed on the same point, the nations' youth could benefit greatly once again from the service of a Civilian Conservation Corps. All in all this internship has been a privileged learning experience.

The Midwest

Special Responsibilities and Partnership

The Spring of 2011 brought some of the worst flooding along the Missouri River in over 60 years. DeSoto National Wildlife Refuge was forced to evacuate its visitor center and relocate the archaeological collection from the Steamboat Bertrand (figures 3 and 4), a national register listed site, located on the Refuge.

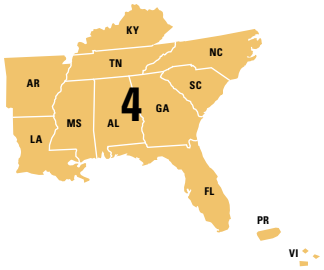
Volunteers honored for saving the Bertand collection

Desoto and Boyer Chute National Wildlife Refuge staff hosted a celebration to thank the many volunteers who helped build levees, pack artifacts and perform countless other tasks during the flood. Following a picnic lunch, refuge manager Tom Cox told the volunteers their efforts saved the refuge $27 million in costs and preserved a national treasure. He said the cost estimate is a result of discussions with engineers working with other companies early on to determine what the costs of restoring the infrastructure would be if the water was as high as predicted. Cox said museum specialists estimated the Bertrand collection would take anywhere from three weeks to six months to evacuate. With the help of more than 100 volunteers, the collection was packed up and removed in a week. "That collection would not have survived," Cox told the volunteers, "had it not been evacuated." Even though the floodwaters never entered the main floor, the museum could not have maintained the climate necessary to preserve some of the artifacts.

Figure 3. Some of the Bertrand Collection at the Refuge (before the flood)

Figure 4. The collection as of August 2011, in temporary storage in Omaha, NE.

The Southeast



Special Responsibilities
2011 saw continued work in addressing cultural resource issues brought about by the Gulf Oil Spill. Namely, a second Historic Property & Cultural Resource Trustee Meeting that was held in January 2011 in New Orleans. The meeting had three purposes; the first was to update the Trustees on the status of the clean-up efforts and the transition of command from the centralized Unified Incident Command back to the local 8th Coast Guard District; the second was an update on archaeological and ethnographic investigations being conducted as part of the Response and SCAT phases; and the third was an initial discussion of a BP proposal to establish a Deepwater Horizon Gulf Coast Cultural, Tribal and Historical Endowment. The endowment was intended to create a funding mechanism for peer-reviewed research grants similar to that used by the Gulf Coast Research Institute for natural science investigations.

Also noted during the January meeting – there are only two active shoreline sectors – the Louisiana Coast and the Mississippi-Alabama-Florida Panhandle Coast. The rest of Florida's Gulf Coast and the Keys are no longer considered at risk. HDR, BP's archaeological contractor, reported that approximately 4,275 miles of shoreline had been surveyed for the Louisiana Coast, In the process, 135 recorded terrestrial archaeological sites were revisited, 43 new terrestrial archaeological sites were identified, 46 recorded submerged sites were revisited, and 84 likely submerged sites were identified using 2010 imagery. 29 archaeological sites were reported as being "oiled."

For the Mississippi-Alabama-Florida Panhandle, approximately 990 miles of shorelines have been surveyed, 584 recorded archaeological sites were revisited, and 65 new sites were identified. Approximately 275.4 miles were deemed archaeologically sensitive; additional subsurface testing of 100 miles of this stretch of shoreline was being conducted. Techniques included monitoring, SCAT auger testing, and systematic shovel test units.

For the impacted submerged areas of the Gulf, HDR identified 25,000 anomalies. Their efforts have largely focused on database collection, historical archival research, oral history interviews, protocol development, field surveys, inadvertent discoveries (i.e. 19th century anchor, timbers on the beach, and Jack's Wreck at Gulf Shore), and monitoring. Field surveys have focused on the terrestrial beach face, near shore and intertidal areas, and the offshore area.

Ethnographic investigations are underway. This work is divided into two phases; the first phase involved the identification of affected communities, the second phase involves the identification and subsequent National Register-eligibility assessment of culturally significant places and traditional cultural properties. The initial draft report has been delayed and it is unknown when it will be available for review by the Trustees.

Science and Research

Site Management Plan in development for Lighthouse Island.
The island, which is located in a Wilderness Management Area, sports two 19th century lighthouses (one of which is shown in figure 5) and associated archaeological site. The lighthouses were listed on the National Register of Historic Places in 1981. Management discussions in the plan focused on short-term emergency steps to temporarily secure the lantern room to the masonry tower and to address water leakage into the tower, as well as longer term plans regarding stabilization of the second tower, and mapping of the above-ground architectural ruins.

Figure 5. National Register Lighthouse located on Lighthouse Island.

B-17 at St Marks National Wildlife Refuge
The fragments from the wing and tail assembly (figure 6) of a B-17 were identified and recorded at the Refuge. Research revealed them to be connected to a B-17 crash in the area on July 30, 1944 .

CNN at Camp Lawton
CNN took footage of the civil war site and interviewed Kevin Chapman and Rick Kanaski (USFWS) (figure 7), Amanda Morrow (Georgia State

Figure 6. B-17 fragment recovered from St. Mark's National Wildlife Refuge

Figure 7. Kevin Chapman interviewed by CNN for his finds at Camp Lawton.

University), Dr Sue Moore (Georgia State University), and Dr. David Crass (Georgia State Archaeologist).

Georgia Southern University honored for Camp Lawton archeology
Georgia Southern University's team of student and faculty archaeologists has been honored with the U.S. Department of the Interior's Partners in Conservation award for their work in discovering a long-lost Civil War prison camp near Millen, Ga.

The team was presented the award by Interior Secretary Ken Salazar during a ceremony in Washington, D.C. The award is given to those who have achieved exemplary conservation results through local partnerships, while engaging the community. Georgia Southern's team was honored for their discovery of the exact location of Camp Lawton along with numerous personal artifacts left behind by Civil War soldiers (figure 8).

"Georgia Southern University is very proud of our students and faculty who have been honored with the Partners in Conservation award," said University President Brooks Keel. "Not only has their research and subsequent discovery shed new light on a critical point in American history, but it has also created numerous opportunities for the community. Our archaeology team has hosted hundreds of school children at the site to give them a hands-on educational experience." The artifacts were found at Magnolia Springs State

Figure 8. GSU students working at Camp Lawton, Bo Ginn National Fish Hatchery

Park outside Millen. The area was the site of Camp Lawton, which at the close of the Civil War was believed to be the largest prison camp in the world. The state park was established in the 1930s, after the exact boundaries of the prison camp were no longer known. Last year, Georgia Southern University professor Sue Moore and graduate student Kevin Chapman led the team of student archaeologists that pinpointed the site of one stockade wall and found the first artifacts on a portion of land in Magnolia Springs State Park that had recently been transferred to the U.S. Fish and Wildlife Service. In addition to the Georgia Southern University team, representatives from the Georgia Department of Natural Resources, U.S. Fish and Wildlife Services and Jenkins County were also honored for their work on the preservation of the Camp Lawton site.

Mount Zion Church, Tennessee National Wildlife Refuge
NPS-Historic Preservation Training Center has conducted, via contract, a historic structure condition assessment for the Mount Zion Church, a NR-listed building located on the Big Sandy Unit of the Tennessee NWR (figure 9). The intent of the work was to provide USFWS a more comprehensive idea of structural and maintenance issues, prioritized list, and cost estimates so that we can work with the local community and the Refuge's Friends Group on stabilizing the building and ensuring its longevity. The original (a log structure) was standing during the Civil War – Nathan Bedford Forrest & his troops ran past it prior to their attack on Union troops and ships at Johnsonville.

Figure 9. Mt. Zion Church, Tennessee NWR

Alaska

Science and Research

USFWS Research on Iditarod Trails Roadhouses
In 2011 The US Fish and Wildlife Service, awarded a Challenge Cost Share grant to the Iditarod Historic Trail Alliance, for additional research on the trail route and associated roadhouses along the trail. Most trail segments and roadhouses within the borders of the Innoko NWR are poorly documented and in many cases their exact locations are unknown. The forty-four mile trail segment between the ghost town of Dishkakat, in the center of the Innoko NWR, and the modern village of Kaltag, is especially obscure. No trace of the trail is visible today, and its route is unknown. Identifying and locating six roadhouses along the trail route is the only chance for defining the actual route of the historic trail.

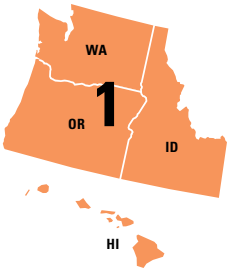
The Athabascan village Dishkakat 75 miles northwest of the refuge headquarters in McGrath became a Gold Rush boomtown in 1906, serving as the main supply line for the Innoko and Iditarod region. By 1909, the town had a post office (the Innoko Post Office), four roadhouses, and two general stores. In 1910 there were 74 Euroamerican and 48 Athabascan residents. After 1915 Dishkakat began a slow decline, losing the Post Office in 1918.

University of Alaska Anchorage graduate student Heather Ralston has adopted the collections of historic records and photos (figure 10) as the basis for her Master's degree. She is anchoring the story of six roadhouses: Daniel's Cabin, All-Right Roadhouse, Lakeshore Roadhouse, Slough Roadhouse, Capt. Dalquist's Lodge, and Adolph Mueller's Roadhouse and Store, within the larger context of Dishkakat.

Figure 10. Group in front of Saloon in Dishkakat. The photo is in a group dating between 1896 and 1913. USFWS

Field work in 2010 was limited due to river ice and visits to the sites had to be postponed. In 2011 research continued and focused on locating the physical remains of as many roadhouses as possible.

The Pacific Northwest and Hawaii



Partnerships

Rella Reimann thought she would be dead before a marble marker was placed to note the site where the White Bluffs settlement once stood in Franklin County. And that's why she broke out the champagne – to celebrate the culmination of 12 years of work with other Franklin County Historical Society members past and present near the White Bluffs boat launch, about 60 miles north of Pasco off Highway 124, in the Hanford Reach National Wildlife Refuge.

Reimann, a former president of the historical society, said society members wanted to document early Franklin County history with the marker. "People tend to think local history began when Hanford helped with the production of plutonium for the atomic bomb", she said. "They forget that the history in Franklin County was many, many years prior to that," she said.

The marker notes that the community of White Bluffs, which was removed to make way for the Hanford project, actually originated in Franklin County before it moved in the early 1900s to the Benton County side of the river.

The project wasn't as simple as just getting the marker donated from Wylie Monument in Walla Walla. Reimann said the group also had to get approval from the Army Corps of Engineers, the U.S. Fish & Wildlife Service and the tribes.

"Then our problems began with the bureaucracy," Reimann said.

The project went on the back burner while society members focused on other matters, said Sherel Webb, historical society administrator. But members still saw value in the project, so it was resurrected several years ago and finished after the monument was installed. The marker was placed near the only remaining building from the settlement – a log cabin.

Webb said the cabin could be from the late 1850s, but there aren't any documents found so far that pin it to an exact date. It is thought to be one of the oldest buildings in the county. Jim Rabideau, historical society trustee emeritus, said there is a controversy over whether the remaining building actually was the blacksmith's shop. He's of the opinion it was, but that isn't included on the marker.

The area is open to the public year round, although the log cabin itself is fenced off, having been reinforced at different times, it is currently missing most of its roof and has dirt filling the floor of the 7-foot structure.

The White Bluffs settlement was a transportation hub for supplies heading to mining camps in northern Idaho, Montana, British Columbia and Fort Colville, Washington. The settlement had an Army depot, Wanapum village, ferry, saloon, trading post, warehouse and some houses. The marker notes the heyday of the settlement as between 1858–70.

At its height, the settlement may have had around 30 people, said Rabideau, who researched area history for the project. "It was the center of the universe for probably six or seven years," he said. "There was nothing else around here."

But the end of steamers and pack trains hauling supplies through the White Bluffs area stopped that. Railroads were cheaper and more efficient, Webb said. The settlement moved, and the area became ranches instead, with a ferry that operated until the 1940s.

Rick Venable, historical society president, said despite growing up in Franklin County, it wasn't until he became involved with the historical society that he found out about Franklin County's White Bluffs settlement. He said he found it amazing that the area had a history of settlement before the Civil War.

Having the marker is part of educating the public, said Sue McDonald, Service visitor services manager. The marker is the first historical marker to be installed in the wildlife refuge, she said.

The Service has helped the society make sure the information on the marker is historically accurate, Venable said. Now, when visitors to the wildlife refuge see the remnants of the log cabin behind its wire fence, they will no longer have to wonder what the building is, said Gracie Cooper, former historical society president.

"I didn't think we'd ever see this," she said, looking at the installed marker for the first time.

For more information about the Hanford Reach National Monument, visit www.USFWS.gov/hanfordreach/index.html.

Appendix 1. 2011 Report Text and Data

I. Cultural Resource Management

Program History

Cultural resources (also known as historic properties or heritage assets) include: archaeological sites (both prehistoric and historic and their associated documentation), buildings and structures, landscapes, objects, and historic documents. These items form a tangible link with the past. As an agency of the Federal government, USFWS is responsible for, and committed to, protecting and managing these irreplaceable resources in a spirit of stewardship for future generations to understand and enjoy. A Cultural Resources Management (CRM) program was established at USFWS in the 1970s to manage the rich array of cultural resources under its jurisdiction. Its primary goals are to:

- identify, evaluate, and encourage preservation of cultural resources
- manage museum property collections
- consult with a broad array of interested parties
- promote heritage education
- provide expertise to USFWS programs such as, Federal Assistance, Partners for Fish and Wildlife, Realty, Endangered Species, Refuges, Fire, and Planning with respect to Cultural Resource needs

Since its inception, the program has expanded as cultural resource laws, requirements, and public concerns, continue to increase. The Federal Preservation Officer, located in Arlington Virginia, coordinates the USFWS CRM program with many responsibilities delegated to regional staff. These include professional archaeologists, historians, and museum specialists. Each cultural resource professional in the USFWS meets the Secretary of the Interior's professional qualification standards for historic preservation qualifying them to conduct this type of work and serve as experts for this resource type.

Table 1. USFWS Regional Historic Preservation Officers

Region	*Name*	*Contact*
1 and 8	Anan Raymond	20555 SW Gerda Lane Sherwood, OR 97140 503-625-4377; fax: 503-625-4887
2	David Siegel	P.O. Box 1306 Albuquerque, NM 87103 505-248-7396; fax: 505-248-7950
3	James Myster	5600 American Boulevard West, Suite 1049 Bloomington, Minnesota 55437 612-713-5439; fax: 612-713-5287
4	Richard Kanaski	694 Beech Hill Lane Hardeville, SC 29927 843-784-6310; fax: 843-784-2465
5	John Wilson	300 Westgate Center Drive Hadley, MA 01035-9589 413-253-8560; fax: 413-253-8468
6	Meg VanNess	P.O. Box 25486 Denver Federal Center Denver, CO 80225 303-236-8155 x258; fax: 303-236-8163
7	Debbie Corbett	1011 E. Tudor Road Anchorage, AK 99503 907-786-3399; fax: 907-786-3976
9	Eugene Marino	4401 North Fairfax Dr. Arlington Virginia 22203 703-358-2173; fax: 703-358-2517

Each Region employs at least one cultural resources specialist. These Regional Historic Preservation officers provide expertise and management advice to Senior Regional leadership with respect to cultural resources (table 1).

The primary responsibilities of the Cultural Resource program and the Regional Historic Preservation Officers (RHPO) is to facilitate Service compliance with the National Historic Preservation Act (NHPA) and comply with other authorities pertinent to cultural resources (for detailed information on these authorities see http://www.USFWS.gov/historicPreservation/crp/authorities.html) , such as the Native American Graves Protection and Repatriation Act (NAGPRA) and its Museum Property related responsibilities. Program staff also comments on cultural resource related policy and guidance and offer opportunities for training and education on cultural resources to both Service staff and the general public.

Staff and Budget

Funding for National Historic Preservation Act compliance comes from individual program dollars with the majority of these activities being conducted on Refuges. This funding is used to support 20 cultural resource FTE (the second smallest cultural resources staff in Interior, Table 2), but does not include costs of cultural resource related contract work (e.g., survey, excavations, etc…that are not completed in house).

In 2010 the Headquarters launched a workload analysis for the cultural resources program to determine what

level of staff is required to properly perform the duties. Looking at day-to-day tasks across a spectrum of workload factors such as, 106 compliance, NAGPRA consultation, and administration etc…a formula will generate a number of FTE commensurate with the work. The study was completed in December 2011. Table 3 notes that USFWS should increase its Cultural Resources staff by 20 FTE to keep pace with the **current** workload levels. The report does not speak to expected workload **increases** in areas such as NEPA compliance and Tribal consultation. See Appendix III for the complete workload study.

Table 2. Expertise within the Cultural Resources Program

Region	*Acres (Refuges only)*	*Expertise*	*FTE*
1	89,947,372	Archaeologist	8
2	2,906,535	Archaeologist	1
3	1,365,800	Archaeologist	1
4	3,490,907	Archaeologist	1
5	460,646	Archaeologist	3
6	5,372,464	Archaeologist	3
7	78,837,263	Archaeologist	1
8	2,844,734	Architectural Historian	1
9	–	Archaeologist	1

Internal Policies, Guidance, and Reporting for Cultural Resources

USFWS has developed several internal policies and handbooks that pertain to cultural resource program activities. 614 FW chapters 1–5 provides policy for compliance with the National Historic Preservation Act and coordination with the National Environmental Policy Act.

126 USFWS chapters 1–3 provides policy for the USFWS museum property program. It outlines responsibilities under federal statute as well as Departmental standards. It is available on our museum property website http://www.USFWS.gov/historicPreservation/mp/museumPropPol.html

In FY11 both FY 614 and 126 were revised and updated. New versions are expected to go into effect in FY13.

Performance

Because Cultural resources are included in the USFWS Strategic Plan, several reporting requirements specifically for performance are also the purview of the RHPO. The RAPP/Ops plan measures specific to cultural resources are:

- Number of archaeological sites in good condition
- Number of historic buildings in good condition
- Number of museum collections in good condition
- Number of paleontological sites in good condition

Data for the Refuge Annual Performance Plan (RAPP) and the USFWS Division of Finance Required Stewardship Information (RSI) report are embedded within other data categories noted under Compliance with the National Historic Preservation Act and other sections of this report.

Compliance with the National Historic Preservation Act

The USFWS Regional Historic Preservation Officers and, where applicable, their staff are the primary points of contact in each Region for cultural resource or historical/heritage asset related activities. They are the subject matter experts for the Regional Director, who retains final decision authority as per USFWS cultural resource policy (http://www.USFWS.gov/historicPreservation/crp/policiesHandbook.html). 90–95% of RHPO time is spent assisting the Regions of the Service to comply with Section 106 of NHPA. Section 106 requires federal agencies to consider potential effects of their mission related activities on cultural resources. These activities can range from the construction of a cell tower to creation of impoundments for duck habitat. In many instances, the RHPO is able to provide information on the potential of these projects to impact cultural resources very quickly. In other examples, further research and consultation is required. Table 4 shows data for NHPA compliance activities of the program during the FY.

USFWS RHPOs also provide assistance in the development of Comprehensive Conservation Plans (CCPs) and Habitat Conservation Plans (HCPs) and provide comments on USFWS grants that might

Table 3. Recommended staff increases as noted in the completed Workload Analysis for Cultural Resources

Region	*R1*	*R2*	*R3*	*R4*	*R5*	*R6*	*R7*	*R8*	*Total*
FTE Authorized	9	1	1	2	2	3	1	NA	**19***
Recommended FTE	9	3	6	5	6	6	4	NA	**39**

Excludes Washington office FTE and is based on 2008 (base year used in the report).

have the potential to affect cultural resources. Not all Regions are equally active in CCP and HCP development.

The Regions noted compliance activities such as review of land acquisitions, CCP reviews, assistance with completing NEPA documents, review of Federal Highways projects (bridge replacements and highway realignments). Some also identified work with contractors and partners as falling under the compliance responsibilities. Region 4 for instance noted partnering with the Georgia Southern University on the Camp Lawton Civil War site as also contributing to time spent on compliance issues. They also noted continued compliance work associated with response to the MS Canyon oil spill, including significant progress toward completion of several archaeological reviews and management documents such as the draft Programmatic Agreement regarding Section 106 compliance.

Table 5 notes Service involvement in monitoring its historic structures. These structures have been identified as requiring monitoring for various reasons, but mainly for interpretation. Many historic resources, like the Assateague lighthouse at Chincoteague National Wildlife Refuge, are interpreted for visitors and their history incorporated into visitor opportunities.

Region 7 has established a partnership with the Alutiiq Museum for monitoring archaeological sites on Kodiak National Wildlife Refuge. In 2011, 25 stewards monitored sites in Uganik, Uyak, and Olga Bays.

RHPOs also maintain National Register data for the Region. As their time permits, they focus on addressing the backlog of sites that are listed as **eligible** to the National Register. These properties must be reviewed and a determination made as part of compliance with the NHPA. Table 6 shows current National Register and other National designation data. Region 6 recently added a single airplane hangar

Table 4. Cultural Resource Program – Compliance Activities*

Compliance	*R1*	*R2*	*R3*	*R4*	*R5*	*R6*	*R7*	*R8*	*Total*
Number of NHPA Reviews this FY	184	90	200	122	217	480	111	205	**1,609**
Number of archeological surveys this FY	283	15	16	13	8	20	5	61	**421**
Number of acres surveyed this FY	2,695	200	914	38	9.5	1,000	3,000	2,232	**10,088**
Number of archeological sites this FY	44	5	13	63	1	7	58	0	**191**
Number of archeological recovery projects this FY	0	0	0	0	0	2	0	1	**3**
Total Number of historic buildings or structures in the Region	188	5	9	70	203	1,275	38	53	**1,841**
Number of condition assessments for historic buildings this FY	0	1	0	4	2	0	0	0	**7**
Total Number of Archaeological Sites in the Region	835	430	3,553	2,396	922	1,592	3,955	1,290	**14,973**
Total Number of Paleontological Sites in the Region	3	1	0	1	0	571	322	2	**900**

Table 5. Monitoring and Use of Cultural Resources

CR Monitoring and Use	*R1*	*R2*	*R3*	*R4*	*R5*	*R6*	*R7*	*R8*	*Totals*
Number of sites/buildings interpreted for visitors	5	5	0	9	2	8	0	4	**33**
Number of sites/buildings being maintained for research	0	0	0	2	3	0	10	0	**15**
Number of sites/buildings being maintained as a result of damage	0	1	0	1	0	0	10	3	**15**

Table 6. National Designation Data

	R1	*R2*	*R3*	*R4*	*R5*	*R6*	*R7*	*R8*	*Totals*
Total number of NRHP eligible sites	0	100	17	66	14	266	3,800	0	**4,263**
Total number of NRHP sites actually listed	17	5	13	25	12	15	8	10	**105**
Total number of national monuments	5	0	0	0	0	0	1	0	**6**
Total number of national historic landmarks	1	2	0	1	1	0	4	2	**11**

(fabricated by the Butler Manufacturing) that is just south of the J. Clark headquarters in McHenry County, North Dakota, however, Region 7 notes little progress on a strategic plan for its World War II Valor in the Pacific Monument, which was established in 2009.

The RHPO assists USFWS and Refuges Law Enforcement in cases that include an archaeological component or that violate the Archaeological Resources Protection Act (ARPA) of 1979. This data is noted by the RHPOs but is also reported up through USFWS Law Enforcement channels. Table 7 notes ARPA related activities for the FY.

NAGPRA

In addition to its responsibilities under NHPA, the USFWS also complies with The Native American Graves Protection and Repatriation Act of 1990 and its regulations (43 CFR Part 10). NAGPRA address the rights of lineal descendants, Indian tribes, and Native Hawaiian organizations (parties with standing) to Native American human remains, funerary objects, sacred objects and objects of cultural patrimony. The statute requires Federal agencies and museums to provide information about Native American cultural items to parties with standing and, upon presentation of a valid claim, ensure the item(s) undergo disposition or repatriation.

In 2009 the Government Accountability Office (GAO) conducted a survey of federal agency compliance with NAGPRA. They directed the National NAGPRA office of the National Park Service to collect data from agencies that documents their compliance. Table 8 captures the USFWS responses to their compliance queries.

In August of 2011, DOI Bureaus were asked by Pam Haze, Deputy Assistant Director for Budget, Finance, Acquisition and Performance to bolster the needs identified for NAGPRA compliance, which had been requested by the GAO audit through the NPS National NAGPRA office (See Table 11 for the FWS response). Because of lack of funding and staff, most DOI Bureaus have made little progress in meeting their responsibilities under NAGPRA.

Training, Education and Youth

In addition to responding to active NHPA undertakings and maintaining National designation data, the RHPO is also responsible for maintaining, when possible, opportunities for training and volunteering related to cultural resources. Table 9 shows all such outreach and volunteer activities that occurred in the FY with respect to USFWS cultural resources. Region 1/8 noted 64 presentations delivered to youth groups in the Regions.

Since its inception, the USFWS Cultural Resource program has been offering a classroom based course on the program and compliance with Section 106 of NHPA. The course is well attended from all programs in USFWS (usually about 30 students), members our Friends groups can also attend, especially from those Friends groups who are actively engaged in preservation activities. Though not offered in FY 11, the course is planned for FY 12.

Regions noted the need for training aimed at contractors involved in other kinds of work (e.g. biological monitoring, planning etc) to sensitize them to cultural resources and make them more aware of their importance. Region 7 also noted work with volunteers on survey projects to Adak on Alaska Maritime National Wildlife Refuge and monitoring on Kodiak National Wildlife Refuge. Region 4 noted several professional papers presented to National and Local conferences and made to local organizations on the role of cultural resources on Refuge system lands.

The USFWS Federal Law Enforcement Training Center (FLETC) offers law enforcement training programs government wide. For the past 5 years they have offered a training course for compliance with the Archaeological Resources Protection Act. Several offerings of this course are made during the year. They are attended primarily by archaeologists and federal law enforcement officers. FLETC works with the USFWS cultural resources program to update this course and to market it to USFWS cultural resource staff.

In 2004, the USFWS cultural resource program launched its national website (http://www.USFWS.gov/historicpreservation/). The website has information on all aspects of the program including a section for Employee training. Here one can find documents, videos, and lectures for employees to increase their understanding of the program and the Service's responsiblities.

FY11 also marked the completion of the USFWS Cultural Resources on-line training series. The series examines several key elements of proper compliance with cultural resource authorities and seeks to provide helpful tips for employees faced with cultural resource issues. Topics covered include, an introduction to cultural resources, cultural resource laws, museum property management and understanding Section 106 – the latest module that takes an interactive, choose your ending style approach to understanding Section 106. All modules are accessible through DOILearn.

Table 7. ARPA data for the FY

	R1	*R2*	*R3*	*R4*	*R5*	*R6*	*R7*	*R8*	*Totals*
Number of ARPA permits received this FY	2	0	9	11	2	9	5	2	**40**
Number of ARPA permits issued this FY	2	0	9	10	2	9	5	1	**38**
Number of ARPA consultations this FY	2	0	0	13	1	1	5	1	**23**
Number of ARPA violations this FY	0	0	0	1	0	0	3	0	**4**
Number of ARPA arrests this FY	0	0	0	0	0	0	0	0	**0**

Table 8. Status of Regional NAGPRA Compliance

NAGPRA	*R1*	*R2*	*R3*	*R4*	*R5*	*R6*	*R7*	*R8*
Number of published notices of inventory completion this FY	0	0	0	0	0	0	0	0
Notice ID(s)	0	0	0	0	0	0	0	0
Total MNI in Notice(s)	0	0	0	0	0	0	0	0
Total Assoc Funerary Objects in Notice(s)	0	0	0	0	0	0	0	0
Number of published notices of intent to repatriate this FY	0	0	0	0	0	0	0	0
Notice ID(s)	0	0	0	0	0	0	0	0
MNI Repatriated this FY	0	0	0	0	0	0	0	0
Associated Funerary Objects Repatriated this FY	0	0	0	0	0	0	0	0
Number of NAGPRA consultations this FY	0	0	0	0	0	0	0	0
Total Number of Culturally Affiliated Remains awaiting NAGPRA review	0	0	4	0	0	0	5	0
Total Number of Culturally Unaffiliated Remains awaiting NAGPRA review	0	1	46	0	0	2	500	0

Table 9. Cultural Resources outreach and volunteer activities

CR Outreach	*R1*	*R2*	*R3*	*R4*	*R5*	*R6*	*R7*	*R8*	*Totals*
Number of volunteer hours this FY	1,980	0	0	0	277	0	70	638	**2,965**
Number of presentations to/for youth	64	0	0	0	0	0	1	0	**65**
Number of projects involving youth	1	0	0	0	0	0	1	0	**2**

II. Museum Property Management

As of 2011, the Service is responsible for about **4.1** million objects that include: archaeology, art, ethnography, history, archives, biology, paleontology and geology. Approximately **22** percent of the total number of objects is maintained by Service units, while the remaining materials are curated in non-Federal repositories. The number and size of collections continue to grow as a result of cultural resource studies completed in response to the requirements of the NHPA.

The FY 2011 USFWS annual museum property summary report indicates that **115** USFWS units are responsible for managing museum property with most collections housed in **183** non-federal institutions (Table 10, and Appendix II). Responsibility for museum property collections has been reported at all administrative levels (e.g., the USFWS Headquarters, Regional Offices, field stations and administrative sites such as the National Conservation Training Center [NCTC]).

In FY11, USFWS began a re-certification effort for its museum property, removing collections from museum property listings if they no longer met the definition of Museum Property and noted in 411 DM. Additionally, collections that have, for years, been attributed to USFWS control through various forms of limited or unverified information are no longer tracked by USFWS. This action resulted in the elimination of 32 non-federal repositories from our totals.

Regions also report better control of museum property held on field stations. Region 7 notes that collections at Kenai National Wildlife Refuge have been substantially re-cataloged and inventoried following a finding by the Office of Inspector General in 2009. Regions 6 and 7 also reduced their number of non-federal repositories as part of the re-certification of museum collections. Region 7 anticipates dropping its number of non-federal repositories to 9 in FY 12.

Funding

In FY 2011, $385,000 from the Service's Refuge Operations and Maintenance Activity has been allocated to Regions as Arts and Artifacts funding. An additional $116,400 in grants (mostly for the Bertrand collection) were also applied in FY11. Funding has been used for program oversight and coordination, compiling inventory information, providing technical assistance and purchasing equipment and supplies for field stations. Additionally, Service repositories, including the D.C. Booth Historic Fish Hatchery, DeSoto National Wildlife Refuge and NCTC, receive additional operations and maintenance funding to maintain their collections, exhibits and facilities.

Table 11 lists funding needs based on a 2011 Workload Analysis for the USFWS Cultural Resources program that called for 1 additional FTE per Region to handle the agency's museum property needs. The report also noted a need for a doubling of the current USFWS Arts and Artifacts budget.

Table 10. Discipline totals for USFWS Museum Collections

Region (federal facilities n=115)	*A*	*Arch*	*Ethno*	*Hist*	*Archives*	*Biol*	*Paleo*	*Geol*
1	5	10,741	1	55	20	480	166	0
2	0	0	0	0	0	2	0	0
3	102	34,695	2	577,320	9,576	1,225	66	0
4	36	12,545	4	207	28,500	366	71	0
5	417	5,453	4	1,328	37,880	6,043	63	0
6	25	100	0	15,896	73,423	0	0	0
7	11	21,000	31	28	66	7,000	200	0
8	23	739	2	31	4	210	1	0
9	0	0	0	100,000	33,400	0	0	0
Non-Federal n=183								
1	0	61,443	1	0	4	0	640	0
2	0	7	0	0	0	0	0	0
3	30	619,483	0	0	0	204	2	0
4	0	382,821	1	1	1,231,500	900	0	0
5	1	90,376	0	106	0	128	0	0
6	0	1,000,000	0	1	0	0	14,380	0
7	0	25,000	0	0	0	0	0	0
8	0	14,488	0	36	0	0	62	0
9	0	0	0	0	0	0	0	0

Table 11. Estimated funding needs for museum property

Action	*Need*	*Funding Amount*	*Outcome*
Increase the current number of FTE for the cultural resource program	Our workload analysis recommends an additional 8 FTE (GS 7, 9, 11) Service-wide to meet museum property responsibilities for USFWS	$271,832 (for 8 GS 7s)	The addition will allow for dedicated staff and time that can be allocated for other program components such as NAGPRA compliance
Create a National Curator/ NAGPRA coordinator position at the Headquarters level	This addition of 1 FTE (GS 11) will more effectively address USFWS museum property	$50,287	1. Standardization of USFWS organization against that seen in other Bureaus 2. Enhance the USFWS ability to consult with Tribes on NAGPRA 3. Improve USFWS ability to meet the needs of its programs (e.g. OLE NAGPRA needs)
Raise the current level of base funding available for museum property management	The current level that has been in effect since 1992 should be doubled and added to base funding for 2013. It should be revisited annually beginning in 2014.	$770,000 (doubling of current amount)	1. Augment current ability to actively manage collections 2. Fund current agreements with non-federal repositories housing collections
Set aside 2 year money in FY 2013 for a review of USFWS legacy collections	Special funding (equivalent to 1 FTE, GS 11, for 18 months) should be used for a contract to examine all USFWS legacy collections for NAGPRA items.	$50,287	Enable review of USFWS legacy collections for NAGPRA items
		$1,142,406	

Museum Program Timeline

2012 – accession any collections that meet the definition of museum property and that have not already been accessioned

2012 – issuanace of an updated Museum Property Policy (in progress); issuance of a Workload Study for the USFWS Cultural Resources program – includes a component on museum property management (complete January 2012).

2011 – Service archaeologist named National Curator for USFWS

2010 – the USFWS began to re-certify its museum property to only those that meet the definition of museum property as per DM 411 (on-going).

2009 – GAO audit of NAGPRA compliance

2009 – an online training course that includes museum property management was developed in conjunction with our National Conservation Training Center. The course is available through DOI Learn

2008 – a second OIG audit for museum collections

2007 – a follow on to the 1991 survey was initiated wherein 80 units reported meeting standards with 32 reporting that they did not.

1996 – NAGPRA assessment released to comply with that Act.

1992 – museum property policy and scope of collections guidance issued.

1991 – in response to the IG audit of 1990, the USFWS initiated a survey to identify specific weaknesses and deficiencies in how collections were being managed. Information submitted by approximately 180 USFWS units cited 14,932 deficiencies related to the management of museum property. Cited deficiencies include the lack of documentation and plans to account for and protect museum property, improper environmental conditions, and lack of staff expertise. The review did indicate, however, that many units meet Departmental standards in terms of certain requirements addressing physical storage space and fire security.

Program Oversight

Oversight responsibility for the program resides with the Assistant Director – Refuges and Wildlife at the national level. The Division of Refuges, Headquarters, has been delegated lead responsibility for providing overall direction and coordinating activities related to the program. Policy development and day-to-day program coordination are collateral duties of the Service's Historic Preservation Officer. Each Regional Director has designated one or more individuals to coordinate functions within their respective Regions and with the Headquarters. The Service also participates in the Department's Heritage Asset Partnership and Interior Museum Program Committee. As per the 1992 USFWS Museum Property policy, each Regional Director has designated one individual as a Regional Museum Property coordinator (on a collateral duty basis) to provide assistance to units and oversee the completion of program activities. None of the Regional coordinators has extensive training or experience in managing collections, although all possess a basic understanding of program objectives and standards for managing

primarily archaeological collections. Regional coordinators have received, at a minimum, introductory training on the program's administrative and technical requirements and a few have attended an 80-hour curatorial methods training course.

Long-Term Objectives

Given the breadth of its collections and number of units involved in managing museum property, the USFWS efforts to meet Federal and Departmental standards will require work to be phased in over a long-term basis. The exact timetable for completing this work is largely dependent upon available funding and FTEs. While work to identify and assess the condition of USFWS collections located in non-USFWS facilities continues, priority is being placed on meeting legal mandates and protecting collections in the possession of offices. The program's major objectives are to:

1. Re-certify that USFWS museum property collections meet the definition of museum property as per DM 411;

2. update policies, procedures and standards for the management of museum property;

3. assess the condition of collections, identify deficiencies and initiate necessary corrective actions;

4. provide for necessary conservation of museum property and ensure its adequate use and storage;

5. connect the protection and use of museum property within the USFWS mission and various program objectives, specifically for interpretation, research, and education; and, develop a network of individuals and offices that are available to provide subject expertise and technical assistance to USFWS units managing museum property.

USFWS Repositories

NCTC

The National Conservation Training Center (NCTC) in Shepherdstown West Virginia is the "home" of the US Fish and Wildlife Service and serves as the National training center for all FWS training. The Fish and Wildlife Service Museum, located within the NCTC, tells the story of the Service within the context of the American conservation movement. The NCTC archives contain an extraordinary collection of about 2600 cataloge files comprised of more than 100,000 objects, photographs, books, and documents. The museum also contains materials from the broader conservation community, including an extensive collection of materials and artwork from the National Wildlife Federation. The museum collection contains an extensive collection of important and sometimes rare conservation books, and the NCTC museum houses an additional collection of unaccessioned, "important" conservation books. The center has one FTE devoted to museum collections and also houses the office of the Service Historian.

In FY11, no changes from FY10, the controlled property (firearms) inventory was updated, and a 100% inventory of controlled property was completed as was a random 5% inventory of the entire collection and an inventory of loan objects. A total of 3885 objects, 46 new accessions, and 109 boxes of books, documents, and photographs were accepted into the NCTC museum collection. The National Wildlife Federation collection of over 3100 original artworks for NWF stamp series was catalogued, conserved, and digitally copied. All new accessions and catalog records were entered in the ICMS database. The cataloging and conservation of the collection is on-going. Key entry and sign-in security measures were maintained. IPM and environmental monitoring was strictly adhered to according to 411 DM standards. Accountability measures were continued with 46 new accessions and 3885 individual objects and 109 boxes of documents catalogued according to 411DM standards. Preventive conservation procedures were carried out on all incoming materials to the museum storage facility. The resource file system was upgraded and expanded. This system makes information immediately accessible to researchers and the interested public. Over 30 requests for information regarding conservation methods, and NCTC holdings, as well as FWS history were answered, with books, pamphlets, Xerox copies, and photographs forwarded to the requestors.

DC Booth National Historic Fish Hatchery

In 1983 the Spearfish National Fish Hatchery was closed by the Service. The City of Spearfish, under a Memorandum of Understanding with the Service, began to operate the Spearfish hatchery. It was renamed the D.C. Booth Historic National Fish Hatchery (DCB). In 1989 discussion among the Directorate of the Service resulted in the reestablishment of a position at DCB. This was in recognition of the potential public information and interpretation benefits to the Service. An administrative person followed in 1991 and a museum curator was hired in 1992. Current Service employees stationed at and responsible for DCB are the Director, Museum Curator, Administrative Officer, and Maintenance Worker. Three additional Service employees are stationed at DCB. Full control and responsibility for the hatchery operations reverted from the City to the Service on 1 Jan 1993.

The potential public information and interpretation benefits to the Service at DCB were recognized in 1989 by the Deputy Director, after discussion among the Directorate. This is accomplished through the preservation of the historic site and through the museum collection. As the National site to collect, preserve, protect, make accessible to researchers, and interpret the history of fisheries management, the site has ample resources available. The facility also serves as a collection site and provides technical assistance on museum property management for other service programs. D.C. Booth serves Region 6 as an outreach and education facility to improve effectiveness in communicating the Service's roles and responsibilities for fish and wildlife resources.

For FY11, DCB worked on entering its collections into the Interior Collection Management System (ICMS).

DeSoto National Wildlife Refuge

DeSoto National Wildlife Refuge, located in Missouri Valley, Iowa, is home to a premier archeological collection of over 500,000 artifacts excavated from the buried hold of the Steamboat *Bertrand*.

On April 1, 1865, the sternwheeler hit a sawyer, or submerged log, twenty miles north of Omaha, Nebraska. Bound for the newly discovered goldfields of Montana from St. Louis, Missouri, the *Bertrand* sank into the depths of the Missouri River; her cargo was a complete loss. Local folklore indicated the ship carried whiskey, gold and flasks of mercury for use in the mining process, a treasure trove worth hundreds of thousands of dollars!

Using historical documents and a flux gate magnetometer, modern salvors, Sam Corbino and Jesse Pursell discovered the wreck on DeSoto National Wildlife Refuge in 1968. Since the boat was on government property, the salvors agreed under the requirements of the American Antiquities Preservation Act of 1906, to hand all man-made artifacts over to the U.S. Fish and Wildlife Service for permanent exhibition and preservation in a public museum. By 1969, the vessel's extant hull was completely excavated from its thirty feet deep, mud tomb under the auspices of National Park Service archeologists. Unfortunately for the salvors, the treasure they sought had eluded them. Insurance Company divers had removed most of the mercury and other valuables in 1865. In spite of this fact, a diversity of tools, clothing, food, and equipment remained in the hold.

A Visitor Center, built by the U.S. Fish and Wildlife Service in 1981, accommodates the artifacts from the *Bertrand*. An environmentally-controlled collection storage area protects the cargo of the boat. The Visitor Center also contains a conservation laboratory for *Bertrand* artifact preservation, research library, theater and exhibition galleries. Permanent exhibits discuss the impact steamboat cargoes and passengers brought to the frontier through the building of towns, farming, logging and mining. Each of these pursuits, while assuring prosperity and growth, initially produced a long term adverse effect upon the environment and wildlife habitats. Displays address the history of wildlife refuges, which were created to alleviate these problems. Temporary exhibits include a variety of topics from art shows to interpretive programs.

In FY2011, the Bertrand collection was moved in its entirety from the Visitor Center to a warehouse in Omaha NE (figure 1). The move was required to save the collection from advancing flood waters of the Missouri River, which experienced the worst flooding in 60 years. The move was completed in a record 10 days largely due to the efforts of Regional staff and volunteers from the local community who have bonded with the collection over the years. Once in its temporary storage, the collection was reviewed for any damage due to the move. With none found, the task of updating the catalog began. Much of the material was believed to have been fully cataloged and inventoried for years, but once in this open setting, it was discovered that the inventory and catalog were incomplete. Updating the catalog will continue well into FY12 and FY13.

Figure 1. Bertrand Collection in their new home in Omaha, NE

Cataloging
USFWS offices report that approximately 1.78 million objects have been cataloged and accessioned, 80% of which are archaeological collections managed by non-USFWS institutions. The remaining 20% consists of items maintained by agency field stations that have been cataloged according to Departmental and USFWS standards.

Collection Movement (FWS Additions and Withdrawals information)
Each year, museum collections 'move' from place to place. They are generated and reach a final storage location, they are removed from the system and are disposed of at another location. For FY11 Table 12 lists the Collection 'Movement" that occurred.

Collection Condition
The USFWS reports that for FY11 a total of 298 facilities hold USFWS collections. 115 are USFWS repositories and the remaining 183 are non-federal repositories. Data on the condition of non-federal repositories is currently being updated and the condition of the 3 USFWS museum facilities is reviewed annually. For USFWS field stations that hold museum collections (federal repositories) Table 13 notes the current Facility Condition Index (FCI) for that facility. FCI is defined as deferred maintenance divided by replacement cost and is the main designator used by USFWS Facilities to speak to condition for the particular asset. An FCI of 0–0.14 indicates a good to fair condition while an FCI of 0.15 or over indicates poor condition. If a facility has a poor FCI and holds museum property, the field station will be advised to move those materials to a location with a better FCI. Though FCI does not speak to museum standards, USFWS believes this is a good first step to coalescing collections on its stations into better conditions. (Appendix II lists all current USFWS repositories).

Table 12. Collection Movement for FY11

Region	*Materials from*	*Materials sent to*	*Archeology*
1	Ridgefield NWR/Portland State University	Fort Vancouver NPS	40249
4	University of Alabama Museums – Moundville [Yauhannah Bluff Site]	Waccamaw NWR	Yes
4	Georgia Southern University – Dept. of Sociology & Anthropology [Camp Lawton]	Georgia Southern University Museum	Yes
5	Blackwater NWR	Maryland Archaeological Conservation Lab	#51530-004 – 3700 items
5	Elizabeth Hartwell Mason Neck NWR	Virginia Department of Historic Resources	#51610-003 – 1011 items
5		Virginia Department of Historic Resources	#51580-002 – 48 items
5		E.B. Forsythe NWR	#52510-004 – 7 items
5		Maryland Archaeological Conservation Lab	#51640-093 – 131 items
5		Maryland Archaeological Conservation Lab	#51640-092 – 161 items
5		Maryland Archaeological Conservation Lab	#51640-091 – 185 items

Table 13. USFWS Repositories listed with their FCI

Region	*Repository*	*Collection Location (the actual room or area the materials reside in)*	*Location Facilites Condition Index: (0.00 Acceptable <.15> Unacceptable 1.00)*
1	Dungeness NWR	Headquarters	0.00
1	Kauai NWR Complex	Kilauea Point Visitors Center	0.22
1	Midway Atoll NWR	Headquarters	0.13
1	Quilence NFH	Attic	0.00
1	Regional Office	CRT Office	0.00
1	Turnbull NWR	EE Center	0.90
1	William L. Finley NWR	Fiechter House	0.65
3	Agassiz NWR	Main Office	1.67
3	Big Stone NWR	Main Office	1.80
3	Crab Orchard NWR	Main Office	0.10
3	DeSoto NWR	Main Office	0.94
3	Fergus Falls WMD	Main Office	0.00
3	Hamden Slough NWR	Main Office	1.06
3	Illinois River Wildlife and Fish Refuge	Main Office	
3	Mingo NWR	Main Office	0.00
3	Minnesota Valley NWR	Main Office	1.30
3	Neal Smith NWR	Main Office	0.05
3	Necedah NWR	Main Office	0.00
3	Neosho NFH	Main Office	0.00
3	Ottawa NWR	Main Office	0.13
3	Regional Office	Main Office	
3	Rice Lake NWR	Main Office	0.65
3	Rydell NWR	Main Office	0.67

Table 13. USFWS Repositories listed with their FCI, continued

Region	*Repository*	*Collection Location (the actual room or area the materials reside in)*	*Location Facilites Condition Index: (0.00 Acceptable <.15> Unacceptable 1.00)*
3	Saint Croix WMD	Main Office	1.24
3	Seney NWR	Main Office	0.29
3	Sherburne NWR	Main Office	1.06
3	Shiawassee NWR	Main Office	0.32
3	Squaw Creek NWR	Main Office	0.61
3	Swan Lake NWR	Main Office	0.93
3	Tamarac NWR	Main Office	0.00
3	Upper Mississippi River Wildlife and Fish Refuge	Main Office	0.00
3	Windom WMD	Main Office	0.05
4	Big Lake NWR	Visitor Center	0.00
4	Savanah Coastal Refuges (RKs office)	Regional Archaeologist's Office	0.00
4	St. Mark's NWR	unknown	
4	Wheeler NWR	unknown	
5	Back Bay NWR	unknown	
5	Berkshire Trout Hatchery	unknown	
5	Blackwater NWR	unknown	
5	Bombay Hook NWR	unknown	
5	Canaan Valley NWR	unknown	
5	Cape May NWR	unknown	
5	Chincoteague NWR	unknown	
5	Craig Brook NFH	unknown	
5	Eastern Neck NWR	unknown	
5	Eastern Shore of Virginia NWR	unknown	
5	Edwin B. Forsythe NWR (Barnegat Division)	unknown	
5	Elizabeth Morton NWR	unknown	
5	Erie NWR	unknown	
5	FWS Regional Office	unknown	
5	Glen L Martin NWR	unknown	
5	Great Dismal Swamp NWR	unknown	
5	Great Meadows NWR	unknown	
5	Great Swamp NWR	unknown	
5	Iroquois NWR	unknown	
5	John Heinz NWR at Tinicum	unknown	
5	Maine Coastal Islands NWR	unknown	
5	Maine Ecological Services Office	unknown	
5	Mason Neck NWR	unknown	
5	Missisquoi NWR	unknown	
5	Montezuma NWR	unknown	
5	Moosehorn NWR	unknown	
5	Ninigret NWR	unknown	
5	Occoquon NWR	unknown	
5	Ohio River Islands NWR	unknown	

Table 13. USFWS Repositories listed with their FCI, continued

Region	*Repository*	*Collection Location (the actual room or area the materials reside in)*	*Location Facilites Condition Index: (0.00 Acceptable <.15> Unacceptable 1.00)*
5	Parker River NWR	unknown	
5	Patuxent Research Refuge	unknown	
5	Prime Hook NWR	unknown	
5	Rachel Carson NWR	unknown	
5	Rappahannock River NWR	unknown	
5	Sachuest Point NWR	unknown	
5	Silvio O. Conte National Fish and Wildlife Refuge	unknown	
5	Stewart B. McKinney NWR	unknown	
5	Sunkhaze Meadows NWR	unknown	
5	Trustom Pond	unknown	
5	Wertheim NWR	unknown	
5	West Virginia Field Office	unknown	
6	Arrowwood NWR	unknown	
6	Browns Park NWR	unknown	
6	Charles M Russell NWR	unknown	
6	Chase Lake NWR	unknown	
6	D.C. Booth NHFH	unknown	
6	Fish Springs NFH	unknown	
6	Fort Niobrara NWR	unknown	
6	Lake Ilo NWR	unknown	
6	Marais des Cygnes NWR	unknown	
6	National Elk Refuge NWR	unknown	
6	Rocky Mountain Arsenal NWR	unknown	
6	Tewaukon NWR	unknown	
6	Upper Souris	unknown	
6	Waubay NWR	unknown	
6	Bear River	unknown	
6	J.Clark Salyer	unknown	
6	Devil's Lake	unknown	
6	Crescent Lake	unknown	
6	Medicine Lake	unknown	
6	Leadville Fish Hatchery	unknown	
6	Red Rock Lakes NWR	unknown	
6	Bowdoin NWR	unknown	
6	Jackson Fish Hatchery	unknown	
7	Alaska Maritime NWR	Visitor Center/ Admin Offices	0.04
7	Alaska Peninsula/Becharof NWR	Admin Offices	0.03
7	Arctic NWR	Admin Offices	
7	Innoko NWR	Admin Offices	0.00
7	Izembek NWR	Admin Offices	0.16
7	Kenai NWR	Admin Offices	
7	Kodiak NWR	Admin Offices	1.00

Table 13. USFWS Repositories listed with their FCI, continued

Region	*Repository*	*Collection Location (the actual room or area the materials reside in)*	*Location Facilites Condition Index: (0.00 Acceptable <.15> Unacceptable 1.00)*
7	Koyukuk/Nowtina NWR	Admin Offices	0.17
7	Tetlin NWR	Admin Offices	0.62
7	Yukon Delta NWR	Admin Offices	0.75
8	Don Edwards San Francisco Bay NWR	Visitor Center	0.20
8	Desert NWR	Field Station	
8	Modoc NWR	Headquarters	0.27
8	San Luis NWR Complex	Headquarters	0.00
8	Stillwater NWR Complex	Vault	0.00
8	Tule Lake NWR	Complex Headquarters	0.00
8	San Luis NWR	Headquarters	0.00
8	Regional Office	CRT Office	0.00
9	NCTC	Archives	0.00

Appendix 2. Federal and Non-Federal Repositories Holding USFWS Museum Property in FY 2011

USFWS Repository	*State*	*Non-Federal Repository*
Dungeness NWR	Hawaii	Bernice P. Bishop Museum (Honolulu)
Kauai NWR Complex	Idaho	U. of Idaho, Alfred W. Bowers Lab of Anthropology (Moscow)
Midway Atoll NWR	Oregon	Benton County Historical Society (assumed portion of OSU Horner Museum collection)
Quilence NFH	Oregon	Harney County Historical Society (Burns)
Regional Office	Oregon	Lake County Museum (Lakeview)
Turnbull NWR	Oregon	Fort Vancouer National Park
William L. Finley NWR	South Dakota	School of Mines and Technology
Agassiz NWR	Washington	Eastern WA U, Arch and Historical Services (Cheney)
Big Stone NWR	Arizona	Arizona State Museum, U of Arizona (Tucson)
Crab Orchard NWR	New Mexico	Museum of New Mexico (Santa Fe)
DeSoto NWR	New Mexico	U of New Mexico, Dept of Anthropology (Albuquerque)
Fergus Falls WMD	New Mexico	U of New Mexico, Maxwell Museum of Anthropology (Albuq.)
Hamden Slough NWR	Oklahoma	U of OK, Sam Noble Museum of Natural History (Norman)
Illinois River Wildlife and Fish Refuge	Texas	Rio Grande Valley Museum
Mingo NWR	Texas	U of Texas, Arch Research Lab (Austin)
Minnesota Valley NWR	Texas	U of Texas, Ctr for Archaeological Research (San Antonio)
Neal Smith NWR	Illinois	American Resources Group (Carbondale)
Necedah NWR	Illinois	Center for American Archaeology
Neosho NFH	Illinois	Illinois Archaeological Survey, University of Illinois, Urbana-Champaign
Ottawa NWR	Illinois	Illinois Transportation Research Center
Regional Office	Illinois	S Illinois U, Ctr for Arch Investigations (Carbondale)
Rice Lake NWR	Illinois	Southern Illinois U Museum (Carbondale)
Rydell NWR	Indiana	Indiana University, William Hammond Mathers Museum
Saint Croix WMD	Indiana	Landmark Archaeological and Environmental Services
Seney NWR	Indiana	U of Indiana, Glenn A. Black Lab of Anthro (Bloomington)
Sherburne NWR	Iowa	Iowa State Archaeologist (Iowa City)
Shiawassee NWR	Iowa	Luther College Archaeological Research Center (Decorah)
Squaw Creek NWR	Michigan	Commonwealth Assoc Laboratory (Jackson)
Swan Lake NWR	Michigan	Grass Lake Historical Society
Tamarac NWR	Michigan	Michigan State Archaeologist
Upper Mississippi River Wildlife and Fish Refuge	Michigan	Michigan State University Museum (East Lansing)
Windom WMD	Michigan	Saginaw Archaeoloigcal Commission
Big Lake NWR	Michigan	U of Michigan, Museum of Anthropology (Ann Arbor)
Savanah Coastal Refuges (RKs office)	Michigan	U of Michigan, Museum of Paleontology (Ann Arbor)
St. Mark's NWR	Minnesota	Archaeological Field Services, Minnesoata Department of Transportation
Wheeler NWR	Minnesota	Archaeological Research Services
Back Bay NWR	Minnesota	Becker County Historical Society

USFWS Repository	*State*	*Non-Federal Repository*
Berkshire Trout Hatchery	Minnesota	Department of Anthropology, University of Minnesota
Blackwater NWR	Minnesota	Hamline University
Bombay Hook NWR	Minnesota	Mankato State University Department of Anthropology
Canaan Valley NWR	Minnesota	Minnesota Historical Society (St. Paul)
Cape May NWR	Minnesota	St. Cloud State University (St. Cloud)
Chincoteague NWR	Minnesota	US Army Corps of Engineers, St Paul District
Craig Brook NFH	Missouri	Arrow Rock State Historic Site
Eastern Neck NWR	Missouri	Lyman Archaeological Research Center
Eastern Shore of Virginia NWR	Missouri	Southeast Missouri State University
Edwin B. Forsythe NWR (Barnegat Division)	Missouri	Southwest Missouri State University, Center for Archaeological Research
Elizabeth Morton NWR	Missouri	Triad Research Services
Erie NWR	Missouri	U of Missouri, Geology Department Museum (Columbia)
FWS Regional Office	Missouri	University of Missouri Museum Support Center (Columbia)
Glen L Martin NWR	Wisconsin	Center for Archaeological Investigations, Marquette University
Great Dismal Swamp NWR	Wisconsin	Commonwealth Cultural Resources Group
Great Meadows NWR	Wisconsin	Great Lakes Arch Research Ctr (Williamston)
Great Swamp NWR	Wisconsin	Logan Museum
Iroquois NWR	Wisconsin	Mississippi Valley Archaeological Center (LaCrosse)
John Heinz NWR at Tinicum	Wisconsin	University of Wisconsin Archaeological Research Laboratories (Milwaukee)
Maine Coastal Islands NWR	Wisconsin	University of Wisconsin Laboratory of Archaeology Madison)
Maine Ecological Services Office	Wisconsin	Wisconsin Historical Museum/Society (Madison)
Mason Neck NWR	Alabama	Auburn University (Auburn)
Missisquoi NWR	Alabama	U of Alabama, David L. DeJarnette Lab of Arch (Moundville)
Montezuma NWR	Alabama	U of Alabama, Erskine Ramsay Arch Rep (Moundville)
Moosehorn NWR	Arkansas	Arch Survey Station (Fayetteville)
Ninigret NWR	Arkansas	Arch Survey Station, Arkansas State U (Jonesboro)
Occoquon NWR	Arkansas	Arch Survey Station, Southern Arkansas U (Magnolia)
Ohio River Islands NWR	Arkansas	Arch Survey Station, U of Arkansas (Monticello)
Parker River NWR	Arkansas	Arch Survey Station, U of Arkansas (Pinebluff)
Patuxent Research Refuge	Arkansas	U of Arkansas Archaeological Collection Facility (Fayetteville)
Prime Hook NWR	Arkansas	U of Arkansas, University Museum (Fayetteville)
Rachel Carson NWR	Delaware	MAAR and Associates
Rappahannock River NWR	Florida	Florida Atlanta University (Boca Raton)
Sachuest Point NWR	Florida	Florida Bureau for Archaeological Research (Tallahassee)
Silvio O. Conte National Fish and Wildlife Refuge	Florida	Florida Museum of Natural History (Gainesville)
Stewart B. McKinney NWR	Florida	Florida State University (Tallahassee)
Sunkhaze Meadows NWR	Florida	Natural History Museum of the Florida Keys (Marathon)
Trustom Pond	Florida	U of West Florida (Pensacola)
Wertheim NWR	Georgia	Columbus Museum of Arts and Science (Columbus)
West Virginia Field Office	Georgia	Georgia Southern University Museum (Statesboro)
Arrowwood NWR	Georgia	South Georgia College (Douglas)
Browns Park NWR	Georgia	University of Georgia (Athens)
Charles M Russell NWR	Georgia	University of West Georgia (Carrolton)
Chase Lake NWR	Georgia	Valdosta State University (Valdosta)
D.C. Booth NHFH	Georgia	Waycross Junior College (Waycross)
Fish Springs NFH	Illinois	Southern Illinois University, Carbondale

USFWS Repository	*State*	*Non-Federal Repository*
Fort Niobrara NWR	Louisiana	Louisiana Division of Archaeology (Baton Rouge)
Lake Ilo NWR	Louisiana	Louisiana State University Museum (Baton Rouge)
Marais des Cygnes NWR	Louisiana	Northeast Louisiana University (Monroe)
National Elk Refuge NWR	Louisiana	R. Christopher Goodwin & Assoc (New Orleans) Temporary
Rocky Mountain Arsenal NWR	Louisiana	University of Southwestern Louisiana (Lafayette)
Tewaukon NWR	Mississippi	Cobb Institute of Archaeology, Mississippi State University, Starkville
Upper Souris	Mississippi	Mississippi Department of Archives and History (Jackson)
Waubay NWR	Mississippi	Mississippi Department of Transportation
Bear River	Mississippi	University of Southern Mississippi (Hattiesburg)
J.Clark Salyer	North Carolina	East Carolina University (Greensville)
Devil's Lake	North Carolina	North Carolina Dept of Transportation (Raleigh)
Crescent Lake	North Carolina	Wake Forest University (Winston Salem)
Medicine Lake	South Carolina	Charleston Museum (Charleston)
Leadville Fish Hatchery	South Carolina	South Carolina Inst of Archeology and Anth (Columbia)
Red Rock Lakes NWR	Tennessee	Charles H. Nash Museum of Archaeology (Memphis)
Bowdoin NWR	Tennessee	Pinson Mounds Museum
Jackson Fish Hatchery	Tennessee	Tenn Div of Archaeology, Dept of Conservation (Nashville)
Alaska Maritime NWR	Virgin Islands	Virgin Islands SHPO (St. Thomas)
Alaska Peninsula/ Becharof NWR	Connecticut	Raber and Associates

USFWS Repository	*State*	*Non-Federal Repository*
Arctic NWR	Connecticut	U of Connecticut, Dept of Anthropology (Storrs)
Innoko NWR	Delaware	Delaware Archaeologcial Museum
Izembek NWR	Delaware	Delaware Bureau of Archaeology and Historic Preservation
Kenai NWR	Maine	Maine State Museum (Augusta)
Kodiak NWR	Maine	University of Maine Archaeological Research Center (Farmington)
Koyukuk/Nowtina NWR	Maryland	Havre de Grace Decoy Museum
Tetlin NWR	Maryland	Maryland Archaeological Conservation Lab
Yukon Delta NWR	Maryland	Ward Museum of Waterfowl
Don Edwards San Francisco Bay NWR	Massachusetts	Dr. S.B. Blanke
Desert NWR	Massachusetts	Peabody Essex Museum (Salem)
Modoc NWR	Massachusetts	University of Massachusetts Department of Anthropology (Boston)
San Luis NWR Complex	Massachusetts	University of Massachusetts, Amherst
Stillwater NWR Complex	Massachusetts	Wayland Archaeological Group (Wayland)
Tule Lake NWR	New Jersey	Rutgers University Center for Public Archaeology
San Luis NWR	New York	Alabama Historical Society (Basom)
Regional Office	New York	New York State Museum (Albany)
NCTC	New York	State U of New York (Buffalo) Anthropology Research Museum

Appendix 3. A Workload Analysis for the US Fish and Wildlife Service Cultural Resources Program

Prepared by Lynn DeLaughter

Executive Summary

Beginning in 2008 and continuing in 2012, the US Fish and Wildlife Service (hereafter, the Service) has been part of federal audits examining some aspect of its Cultural Resource responsibilities. In 2008, the Office of the Inspector General (OIG) conducted an audit of Department of the Interior (DOI) Museum Property management and issued a finding for the DOI as well as the Service. In 2009 the Government Accountability Office (GAO) conducted an audit of agency compliance with the Native American Graves Protection and Repatriation Act (NAGPRA) and issued recommendations to the Service. Then in late 2011, the GAO began another audit of management of agency historic buildings. This audit is currently on-going.

Each audit has been high profile with numerous state and Tribal partners being involved and called upon to offer testimony and comments to findings. Each audit has focused on an asset type that falls under the cultural resources program (hereafter CR) within the Service to manage. The results of the audits have illustrated that the current level of investment for cultural resources management in the Service is falling well short of minimum acceptable standards and without an investment the management practices will continue to be a source of risk through either continued audit findings or potential litigation.

In 2009 the Headquarters Branch of Visitor Services began a workload analysis for the CR program in the Service. The analysis, which was modeled after a successful workload study for the Service's Migratory Bird Permit Program, examined Regional workloads. The results of this analysis (table 1) show optimum staff levels needed for the Service to begin to address deficiencies in its management of these resources. Adequate staffing is essential to proactively identifying and managing cultural resources. The study shows that the current staffing for cultural resources, which may have worked when the program was first established, has not kept pace with the growing need for cultural resource compliance among Service programs. Service compliance with the National Historic Preservation Act (NHPA), the primary activity of the program, takes up almost 100% of current staff time and precludes attention to any other asset type (e.g., museum property). Even with the emphasis on NHPA, staff levels have led to very strained compliance in several regions, strained to the point where State Preservation Offices and Native American Tribes may begin to question our commitment to proper protection of these resources.

Objectives and Methods Explained

Study Objective: Validate workload levels, FTE requirements, and estimate annual operational costs for each Region.

Method of Analysis: Operational audit – a method that can be used to design a framework that will assist managers in assessing cultural resource requirements at the Regional Office level. Need is defined in terms of numbers of FTE, organization/grade structure, and costs determined by Regional *workload assigned.*

Need has been determined by analyzing historical work accomplished using staff assigned over a specific 12 month period.

Staffing Models were constructed using data reported by CR staff.

Purpose and Advantage of using a Staffing Model:

- Regions continue to have maximum flexibility to manage their staff and accomplish assigned workload.

Table 1. Recommended Model (Option 1 – Initial Funding at 80% of calculated cost)

Region	**R1*	*R2*	*R3*	*R4*	*R5*	*R6*	*R7*	*R8*	*Total*
2012 FTE Authorized	9	1	1	2	2	3	1	NA	19
%FTE	42.11%	5.26%	5.26%	10.53%	10.53%	15.79%	5.26%		
Recommended FTE	9	3	6	5	6	6	4		39
80%	$632,734	$245,207	$406,247	$362,441	$422,960	$411,865	$307,198		$2,788,651
2012 Base	$722,000	$150,000	$166,247	$135,933	$254,663	$395,000	$217,000		$2,090,843

Washington Office (R9): Cost estimate is based on authorized staff of 2 FTE.

** This estimate is based on the current organization structure where Regions 1 and 8 are managed as a single Region.*

Net change in funding +697,808

- Budget estimates are transparent, the process is equitable, and allocations are perfunctory.
- Models offer a platform for decision making by responding to changes in the volume of work.
- Models offer an objective tool for evaluating the consequence of a planned change in mission or organization structure.

Basic Assumptions for applying staffing models:

- Numbers of staff are the basis of operational cost estimates.
- The organization structure is the most efficient and the only differences among regions can be explained by the volume work assigned.
- Numbers of FTE, maximum pay-grade, and costs are calculated using approved models.
- A clear and consistent workload reporting criteria must be established.
- Meaningful performance measures will be identified.
- Also, within the "a" value there are times allowed that will not always be performed by CR staff. Although those staff hours do have costs they are general administration tasks provided to the entire regional organization by receptionists, secretaries, admin officers, assistants, and others. These services are not likely to disappear and represent some level of reduced workload at the program level.

Workload Factors: In the course of this analysis it was determined that the primary driver of work for the Service CR program is *properly executed compliance with* NHPA, specifically Section 106 reviews requested. Most other workload is considered incidental or collaterally assigned (e.g. museum property) to the implementation of the 106 compliance processes. Section 106 reviews requested are therefore the basis of this analysis. As numbers of Section 106 request increase or decrease there is a corresponding change in the CR staff hours needed in each Region.

Recommended Staffing Model: 254.26+.6872(X)=Y The recommended model was developed using workload measurement data collected from 6 of 8 regions; a and b values were averaged to create a single staffing model applicable for current CR offices.

Synopsis of Findings

This analysis demonstrates that there is inadequate staffing to meet the minimum level of compliance necessary to carry out the cultural resource mission as assigned and as required by Service policy and the law. Failure to address this inadequacy will put the Service in a legally vulnerable position with respect to cultural resources and might result in greater cost to the Service than simply assigning adequate staff. Current staffing for cultural resources reflects a mindset that worked well in the early 1970s when most of the Regional cultural resources staff was first hired. Originally a 1 CR staff per Region framework was effective with dealing with the number of Section 106 reviews conducted at that time. But as circumstances arose that mandated staff adjustments (as was the case in Region 1) and as the number of Section 106 reviews increased (on average 10–15% per year in all Regions) an organizational structure developed that was increasingly unable to meet the needs of the agency and that is ill equipped to address broader program needs (e.g. museum property and compliance with NAGPRA)

This analysis offers a perspective of need based on the distribution of work among regional offices. The result is a staffing model (guide) that updates the current Service approach to CR and calculates the resources necessary for mission success at the Regional level. The process does not dictate decision making; instead, it offers a process for establishing an equitable distribution of available resources based on workload. Adequate staffing will result in improved performance with priority setting residing with Regional managers. The only limiting factor for any Region is the organizations structure which is the basis of calculating and allocating funds. The proposed organization structure could be altered at the local level, but changes that increase cost should not come at the expense of other Regional CR offices.

Funding

Initial staffing and funding should be no less than 80% of calculated cost; implementation should begin as soon as possible and a target should be established to achieve optimal funding. Workload Factors and performance results can be evaluated after at least one full year of operations at 80%. The model can be adjusted if necessary to account for moderate changes in mission or Regional workloads. Although optimum funding for CR is the goal, it is clear that the Service is facing an austere budget climate in the coming years and that it has other priorities to meet. Investing in CR to 80% of the optimum levels shown in this study will enable the program to more effectively meet its requirements to the agency and the Congress.

Why 80%?

A starting point of 80% will: (1) allow time to evaluate the accuracy of the recommended model based on changes in relevant performance measures; (2) allow development of an element for collecting workload data within the annual CR data call – needed to properly assess the model's capacity to estimate the FTE requirements and costs; and (3) bring Regions to a staffing level that will enable them to meet NHPA compliance needs while also managing other asset types such as museum property, historic buildings and NAGPRA materials. It will allow other Regions to realize the correlation seen in FY 10 Refuge Annual Performance Plan (RAPP) data for Regions 1 and 8, which has operated at 80% of their authorized staffing level, 9 FTE. *A review of results at 80% funding should be conducted after one full year including actual FTE usage, carryover funding, and regional performance* to provide Refuge Chiefs with a sense of what could be accomplished with full staffing.

"It's not often that you get a chance to stop for a moment and have a window into what used to be, it gives you pause" said archaeologist James M. Allan as artifacts from the gold rush were being unearthed for construction of San Francisco's multibillion dollar transportation terminal.

Cultural Resource Program Workload Analysis

In 2009 the US Fish and Wildlife Service (hereafter the Service) Washington Office, Branch of Visitor Services initiated this workload analysis for the purpose of validating and defining the work, determining optimum staff requirements, and calculating annual operational cost to the regional level for the Service Cultural Resources (CR) program. The process used is an operational audit where historical

workload data was documented, accomplishment times were measured, and the information were used to build regional staffing models.

Why the study was conducted?

I. Interest in the management of cultural resources expands to include high level scrutiny

A. Language singling out Service cultural resources by the US House of Representatives

House Report 111-180 – DEPARTMENT OF THE INTERIOR, ENVIRONMENT, AND RELATED AGENCIES APPROPRIATION BILL, 2010

"The Committee believes that the Service should adequately document, protect, and manage significant cultural resources on its lands. The 150 million acre refuge system contains numerous cultural resources that can't be found anywhere else. An example of this is the ancient Chamorro cave art that must be protected at Guam National Wildlife Refuge. The Committee urges the Service to expand its work to document and protect the numerous cultural resources on its lands."

B. Risk associated with recent audits of cultural resources

In July 2008 the Office of Inspector General (OIG) initiated a review of Department of Interior (DOI) museum property management and issued a finding of poor management of museum property for both the DOI and the Service.

- In early FY 2009 KPMG issued negative findings for FWS for museum property, citing overall inefficient record keeping and collection deterioration. A finding was also issued for inadequate condition assessments for Landmarks and National Register Listed sites. KPMG is a global network of professional firms providing Audit, Advisory and Tax services; the audit was accomplished at the request of DOI.

- In late FY 2009, the Government Accountability Office announced to federal agencies its intent to conduct an audit of management practices applied to compliance with the Native American Graves Protection and Repatriation Act (NAGPRA) of 1990. This audit was the first time that such a large scale review of agency-NAGPRA management has occurred. In July of 2010, the GAO issued their report 10-768. After Almost 20 Years, Key Federal Agencies Still Have Not Fully complied with the Act in which they identified deficiencies with respect to federal agency execution of their responsibilities under the NAGPRA of 1990. *Recommendation 1 of that report states that:* "The Secretary of the Interior should direct the cultural resource management programs to develop and provide to Congress a needs assessment listing specific actions, resources, and time needed to complete the inventories and summaries required by NAGPRA sections 5 and 6 for their historical collections." New work associated with GAO's recent audit report for NAGPRA is not included in these estimates. The work could be defined and incorporated into staff models; however, time for historical NAGPRA work was allowed in the measurement and recommended staffing levels may be sufficient.

- In late 2011 the GAO began an audit of historic building portfolio among federal agencies and their management practices for these assets. This audit is on-going.

C. Workload increases for cultural resources staff

Review requirements for National Environmental Policy Act (NEPA) have recently added workload for CR offices that are well above the historical responsibility. Some staff time was measured in every region but it was minimal, averaging only 7 hours per month; this may not be representative of the time commitment from the new requirement where CR reviews of draft and final EAs and EIS for the affected environment and environmental effects sections are now a requirement. Only time will tell if hours allowed are sufficient and they very well could be. Some added responsibility include coordination with and response to the appropriate State Historic Preservation Officer (SHPO), with assistance from the NEPA coordinator, e.g. consultation letters and follow through, including assistance in following up with SHPO recommendations; assistance in identifying, consulting with, and follow through with Tribal Consultation, and providing scoping information for cultural resources when asked as part of internal scoping. Similarly, increased emphasis on NAGPRA will add additional work for all regions; the historical work associated with NAGPRA was *insignificant* for the measurement period but the recently completed GAO audit will require completion of inventories, reporting, and other activities that may exceed NAGPRA workload estimates included in this analysis.

II. The Service CR program staffing investment has remained relatively static since the early 1970s

When the CR program in the Service was first established, a framework of 1 CR staff per Region was adopted. That framework, with few exceptions, has stood since the early 1970s. At that time, this framework made sense given the relatively low number of projects that required compliance with the National Historic Preservation Act (NHPA), which had only become law some 10 years before. But as time marched on and the number of projects requiring an NHPA review and the number of partners becoming more interested in how agencies addressed their NHPA responsibilities grew, this 1 to 1 ratio began to falter until it was clear that CR could no longer make significant progress toward fully achieving its assigned mission.

As compliance with NHPA, especially reviews under Section 106 of that Act, increased (rough 10–15% per Region per year) it began to consume available staff hours. As a result, other CR program responsibilities, such as museum property management1 which is also a main focus of most of the audit findings previously mentioned, is a minimally funded, low priority, collateral duty.

CR Program Background

This workload analysis focused on determining what tasks the CR staff is responsible for and for whom they are accomplished. Although housed within Refuges, the CR staffs provide expertise

[1] Workload consequences for museum property management due to the GAO audit of NAGPRA are not included in this report. The audit lays out specific expectations/ work that existing staff are ill equipped to manage without additional resources. The only work considered in this study for NAGPRA was historic activities which are not representative of the proposed responsibilities.

and support across the agency and are the Region's point of contact for the States, Native American interests, local Governments, and others.

Major Programs Supported by CR include:

- National Wildlife Refuges
- Fire Management Program
- Realty
- Endangered Species
- Fisheries
- Law Enforcement
- Permits
- Partners for Fish and Wildlife
- Wildlife and Sports Fish Restoration
- Most other Grant Programs

Cultural Resource Management Mission Summary: The primary concern of CR staff is to minimize the loss or degradation of culturally significant material. The CR program complies with laws aimed at protecting archaeological and historic sites, focusing mainly on compliance with Section 106 of the NHPA and the Archaeological Resources Protection Act (ARPA). Assistance is also provided for a variety of program (see above) including Comprehensive Conservation Plan (CCP) development as required by the National Wildlife Refuge System Improvement Act, and compliance with NAGPRA.

The overall responsibility is to identify, protect, and share cultural resources. The three primary goals are to (1) evaluate, through a systematic, open-minded study by archeologists, historians, and other specialists to locate resources and to discover or substantiate their significance. (2) Provide considerable thought to the problem of simultaneously protecting resources and making them available to the public, and (3) implement essential and appropriate treatment programs and protective measures.

The CR program reports on several Government Performance and Results Act (GPRA) goals, the DOI and Service Strategic plans, Refuge Annual Performance Plan (RAPP) performance measures, as well as Executive Orders 13287 and 13327 both of which pertain to the management of Federal Heritage Assets (e.g. cultural resources).

CR staffs are regional Subject Matter Experts for the Directorate/Regional Directors, Refuge Manager's, project leaders, and/or regional chiefs.

Organizationally the National Historic Preservation Act requires that each Federal agency have a qualified "Federal Preservation Officer." This individual is located in the Division of Visitor Services and Communications in Region 92. Under Service policy, each Region has a Regional Historic Preservation Officer who meets the Secretary of the Interior's standards for archaeology and historic preservation and qualification standards in 36 CFR 7.

Primary Functions of the CR Program: Compliance with Section 106 (figure 1) of the NHPA (Primary Use of Staff time)

Identification of an Undertaking: A first step is the determining whether or not a project is an Undertaking under NHPA, this will determine the level of work to be completed by the CR staff. Undertakings are basically responsible actions refuge/other managers take that directly affect resources or dollars, e.g. watering a lawn, oiling door hinges, replacing a worn porch floor, to repairing something really fragile, to protection (law enforcement) and that may also impact a cultural resource. By way of cost examples for these projects, the 2010 5-year plan for facilities records $43,208,333 in maintenance projects for historic structures.

If the project is not an Undertaking it need not be subject to section 106 review. If the project is an undertaking and thus has the potential to affect cultural resources the section 106 process continues.

Conduct literature review and record search: Research begins by locating and evaluating cultural resources. It entails historical analysis and detailed physical examination. CR staffs seek to identify and assess the likely effects of an action on the cultural resource(s) before that action is taken. Various documents are examined including Comprehensive Conservation Plans, which establish broad land use allocation decisions and opportunities for participation by Federal, State, and local governments, Indian tribes, and the public. Plans set priorities for preserving and protecting significant cultural resources and ensuring they will be available for appropriate uses such as scientific use, public use, traditional use, experimental use, conservation for future use, and discharged from management. Plans reflect consultation with the SHPO, Indian tribes, and the public, as appropriate. They also determine how selected cultural resources will be protected over the long term.

Conduct fieldwork: Following a literature review if it is warranted, CR staff will conduct fieldwork of the project area to further determine the extent, if any, of impacts to cultural resources

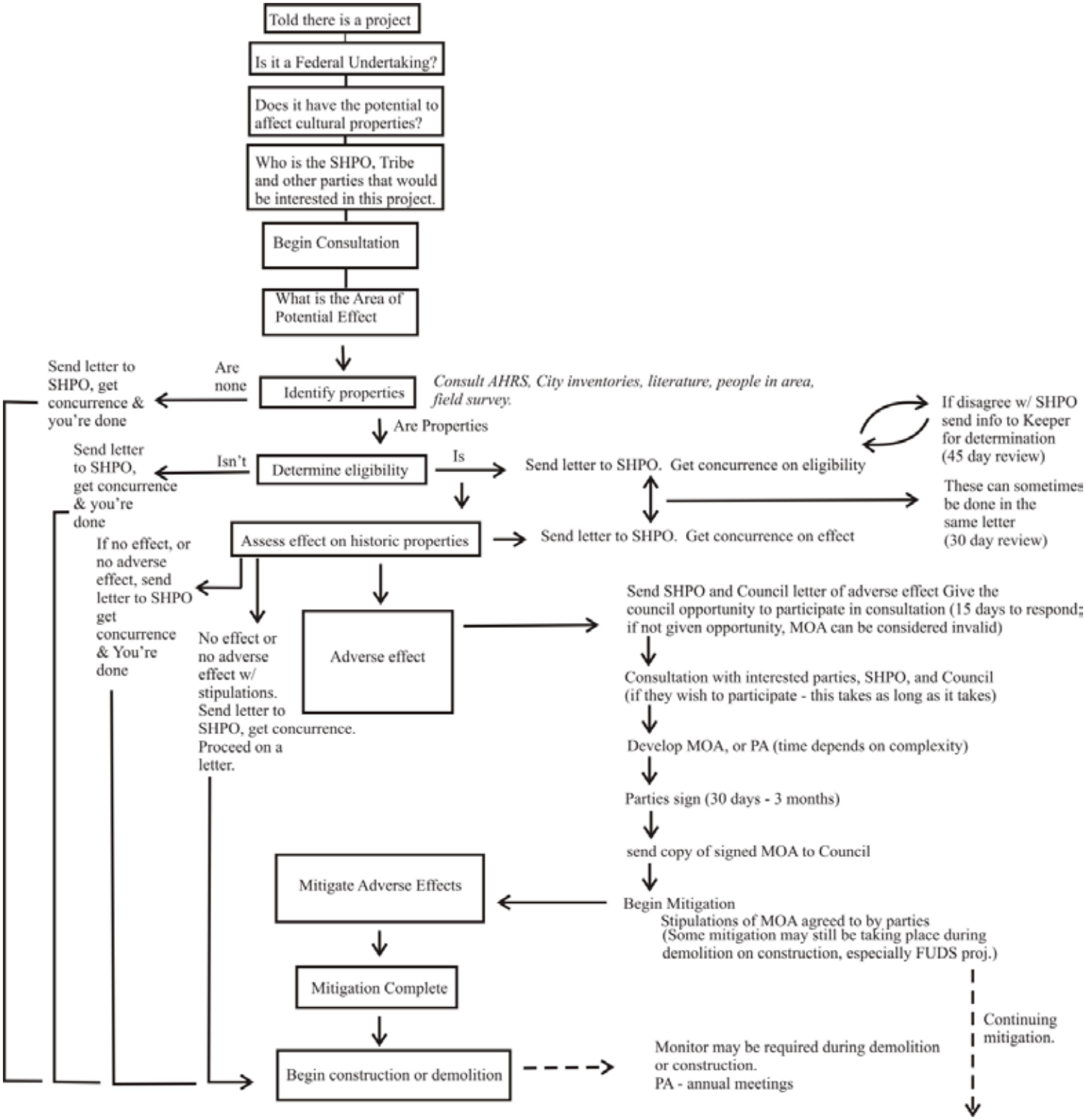
Prepare and review reports and other documents: During the course of the Section 106 process documentation is generated and that materials must be reviewed and commented upon by the CR staff.

Consultation: Section 106 of the NHPA is primarily a consultation oriented process, partners are consulted throughout, each with a comment period mandated by the law. These comments must be integrated into any final mitigation for the undertaking.

Secondary or Co-lateral Functions of the CR program (based on workload): Museum Property Management: CR offices provide scientific and technical advice, information and assistance to prevent or minimize injury to Natural, Cultural, and Historic properties. They are responsible for technical expertise and reporting for over 5 million museum objects, which are stored both at Service

[2] The Washington Office (Region 9) is excluded from this workload analysis. The Federal Preservation Officer is located in Arlington along with the Deputy Federal Preservation Officer. Region 9 is responsible for coordinating the Service's CR program. The Deputy Federal Preservation Officer serves as a member of the Department's Heritage Asset Partnership (HAP), a committee formed by the Office of Property and Acquisition Management. This group advises the DOI Asset Management Partnership, providing cultural resources expertise for the DOI Asset Management Plan and is also a member of the DOI Museum Property Committee and the Chief Archaeologist's workgroup. Functions and operations are primarily management oversight, coordination with DOI agencies, and policy development.

Figure 1. Section 106 Flowchart



facilities and private museums and universities. Regional offices consolidate submitted reports into regional statistics on the number, size, location, and condition of museum objects in their respective regions annually. With the passage of the Paleontological Resources Protection Act the CR office will be the primary regional point of contact for paleontological sites and collections.

Standing structure assessment: Estimated to number 1,500 and include; prehistoric pueblos, cliff dwellings, antelope and bighorn sheep traps, and agricultural features, as well as historic-period mining structures (such as smelters, mill sites, arrastras, and charcoal kilns), ranch buildings, adobe forts, stage stops, town-sites, lighthouses, cabins, a salt tram, and Depression-era schoolhouses.

Tribal Consultation: CR staffs are responsible for consulting with Native American Tribes on all aspects of cultural resources management and are the subject matter experts for compliance with NAGPRA. Consultation in these circumstances is part of Service government to government relations as noted in EO 13175.

Production of Training on Cultural Resources: A tenet of the program is to provide training to Service staff on proper cultural resources compliance. Specialists also work with NCTC to develop classroom and distance learning courses for employees as well as delivering lectures to the Refuge and Realty academies. Training delivery also occurs at the Regional and Refuge levels.

Workload Analysis Methods and Process

An Operational Audit is the process used to determine resource requirements for CR offices (see explanation and full data in Appendix 1). This process allows for analysis of basic operational cost for cultural resource management at the regional office level and is based on historical workload accomplished. Workload estimates are determined by examining historical records, conducting staff interviews, documenting activities, and measuring the frequency of occurrence and per accomplishment time for each assigned task.

This project is designed to define the work, develop models that estimate current or future staff requirements, calculate a base operational budget for each region, and a transparent and equitable budget allocation process.

Underlying principles of this analysis:

- Regional CR offices are efficient and standardized.
- Multiple locations are so similar in mission requirements that no significant differences exist among them, except in the volume of work produced.
- Budget estimates are based on numbers and grade levels of staff authorized under this process.
- There will be no attempt to distinguish among revenue sources.
- Costs that result from unique regionally-imposed workload are not part of this study.
- It is assumed hours contributed by volunteers and contracts will continue at traditional levels. Those hours have been discounted in this analysis.

Primary Goals of Workload Analysis:

- Determine an updated minimum essential staffing and funding required to accomplish the assigned mission.
- Identify and define the work to a measurable level of detail for Regional offices.
- Validate staffing requirements.
- Recommend authorized grade levels/ organization structure.
- Identify operational efficiency opportunities as well as policies or activities that may enhance or compromise mission accomplishment.

Scope: The scope of this study includes all activities accomplished by CR offices during FY 2008. This fiscal year was chosen as the workload measurement period because there were no temporary funding sources that might bias the results by exaggerating the level of work that could be accomplished by permanently assigned staff. There was no formal scoping process for this project although formal meetings with staff occurred early in the development phase and a number of comments/suggestions were provided by CR staffs. Categories of work and their associated task were developed in consultation with staffs.

Study Constraints:

- General administration is provided primarily outside the control of CR managers.
- Regions 2 and 3 were not part of the data collection process.
- R3 had no cultural resource staff assigned during the study period.
- Only one data-collection site visit was conducted.
- Five of eight Regions self reported.
- Region 1 and 8 workload data was reported as a single Region (see below for explanation)
- Data reported through the Service's annual RAPP was not verifiable.
- Few of the performance measures were found to be useful or meaningful as indicators of work.
- CR workload data reported through the Service's ABC process is not useful or meaningful.
- Numbers of Section 106 reviews were not verified; counting processes are not consistent.
- Current funding levels are estimates and source data were not available.
- Historical FTE usages at the CR office level are not tracked.
- Spending by object class was not reviewed.

Significance of Staffing Models ($a+b(x)=y$: The advantage of this kind of analysis is that workload based staffing models provide an objective and defendable evaluation of FTE need, a most efficient organization structure, and a basis for determining operational cost. A comprehensive analysis of the work can be used to defend the associated cost. The depth of detail and analysis in this process provides essential evidence and credibility in defense of overall program need. Staffing models were developed from measured workload data. They can remain a viable management tool over time so long as there is stability in

the organization structure and mission. Budget allocations become a simple mechanical process when workload and organization structure is the basis of the decision making. Other features include:

- Establish a sound relationship between workload, FTE, and funding requirements
- Provide a transparency among organizational components that extinguishs any illusion of inequity among them
- Establish a platform for evaluating new work assignments
- Provide a basis for defending budget estimates and requests
- Easily adjust to changes in the volume of work and associated cost
- Maximize management's opportunity for planning
- Provide a basis for equitable distribution of workload and budgets

Observations:
CR Staff and Expertise Required

Archeology is the dominant technical expert for the Service CR Program. In most cases that expertise can satisfy CR mission requirements. However, other important specialties, which can include Historians, historical architects, ethnographers, collection specialist, and NAGPRA specialist, are utilized to ensure that the CR program is properly equipped to deal with the variety of program assets identified.

All Regions have the flexibility to employ the skills that best meets their specific need; however, a position dedicated specifically to Section 106 should be a standard position with specialization in Section 106 compliance procedures.

General Administrative Workload Functions (Indirect Workload)

Administrative support is inconsistent among regions. Support is provided indirectly and is not documented making actual costs as ambiguous as funding sources. Administration in Cultural Resource Management offices is a universal distraction for professional staff because the activity is not a formal organizational component. Arguably, administration is a fundamental and unavoidable requirement for doing business for any program office, but the vagueness of organizational responsibility required to accomplish these essential task camouflage the staff hours and cost.

Many task defined as "indirect administration" are actually accomplished by CR staff with assistance from any number of administrative support staff assigned within division and branch offices. CR activities that probably suffer the most from this organization structure are files and records management and other house-keeping functions.

Administrative cost were estimated by regional staff based on their local experience and is captured in terms of staff hours displayed as the "a" value in the staffing models.

Examples of Indirect Task Titles and Definitions:
Staff Supervision: Directs and coordinates the internal functions of the Cultural Resource Office and may supervise sub-functional or first level supervisors, and management office personnel. Conducts and attends meetings with Division Chief, other program mangers, supervisors and/or personnel on cultural resource matters, including day-to-day business, personnel counseling and OJT as required.

Gives and receives instructions; attends meetings and briefings; prepares correspondence and writes performance reports; performs complete or partial review of completed actions or projects and signs documents as required; orients newly personnel and solves personnel problems; evaluates work center procedures and implements improvements; counsels personnel as required; coordinates on all personnel matters pertaining to career management responsibilities within the CR function.

General Administration: Writes and/or signs reports, awards, commendations, and letters; greets and escorts visitors.

General Clerical: Maintains files, schedules appointments, drafts correspondence, processes mail, and answers telephones/emails.

Make-Ready and Put-Away: Time spent in preparing or arranging work center equipment/materiel for daily business and putting same away at days end. This work excludes janitorial functions.

Training: Plans, develops, and conducts training for assigned staff; gives or receives counseling or instructions relating to on-the-job and proficiency training; reads and studies appropriate publications; conducts or observes training; maintains training records; reviews, explains, receives or distributes explanations of new laws, policies, procedures, publications, or directives.

Other Productive Indirect: Includes incidental tasks inherent to office operations such as general requisitions, forms and publications management, procurement, literature reviews, distribution of correspondence, and staff management.

Note: These indirect tasks include those assigned by Regional Directors/Program Chiefs or other officials that are classified as collateral duties.

How Productive Indirect Tasks "a" values are applied to staffing models:
This category of work is overhead and administration and is typically referred to as open door cost. These are common-sense activities and cost that exists without exception throughout organizational structures; many are accomplished as incidental steps in a normal day of work, often unplanned. Staff hours are incorporated into models as the "a" value and treated as essential with conducting business. Each region was allowed considerable latitude in estimating indirect times. Regional staffs were asked to estimate and record per accomplishment times to the best of their knowledge; issues of concern were discussed and resolved during data collection.

Within this process these activities are the most difficult to articulate in terms of frequency of occurrence or time expended because they include both predictable and unpredictable tasks. For cultural resources this work is accomplished by any number of administrative and/or managers not necessarily assigned directly to the CR office; however, this work is required.

Times recorded for task identified as Indirect are simply totaled and added to the model for each location, e.g., $a+b(x)=y$. Because these times cannot be easily distinguished from direct times measured, the hours estimated

are *subtracted* from the total hours measured under direct tasks (mission oriented) prior to calculating the model. This step is designed to minimize double counting and avoid exaggerating the total measured hours within the proposed organization structure. Also, this process assumes administrative responsibilities and support that have historically been accomplished outside the CR offices will remain stable and available.

Below are "a" values reported by regions (NA – not available)

R1/8	597.75
R2	NA
R3	NA
R4	242.74
R5	225.56
R6	222.35
R7	233.19

The average of 254.27 hours per month is recommended as the open door cost "a" value for every Region. While no two Regions are identical in their cultural resource management needs, the differences reported are modest, manageable, and probably generous. One FTE equals 145 hours per month.

Based on 2011 workload information reported, the following tables are a reflection of the operational requirements if optimal performance is the goal. The recommended model was developed by first creating a model for each region measured and then taking an average of "a" and "b" values. The model is based on the assumption that the only real difference among Regional offices is in the volume of work produced. "x" is the number of projects that should have had a Section 106 review in 2011.

Validation and Update: To update these estimates, programs will need to report the number of projects over the past 12 months that should have had a NHPA Section 106 review.

Calculating Cost for the Regions

Workloads in Regions 1/8 are actually managed from the R1 CR office; workload data was reported as one Region and an individual staffing model for R1/8 was developed. A stand-alone model was also developed for regions 3, 4, 5, 6, and 7. Workload for the measurement period, using the R1/8 staffing model, yielded a requirement of 7 FTE. The current authorized staffing level for R1/8 is 9 FTE. Because of the limits to on-site visits and the variance in thoroughness among reporting Regions, the individual regional models were averaged to create a single staffing model (used in this report). The single model was developed by averaging results from all regions and standardizing open door or overhead cost ("a" value are hours allowed for non-direct workload, primarily administrative functions).

The current organization structure in R1/8 is by far the most efficient for managing their combined workloads. The workload factor (section 106) information reported for 2011 by R1/8 is 1,450. When this number is applied to the single staffing model (254.27+(1450*.6872) the results are 9 FTE, which is the currently authorized number of FTE (for 2012 as well as the study period). If the management structure were changed so that R1 and R8 are managed independent of one another (as noted in Option 2) the FTE requirement would increase to 11, coupled with overhead cost, the change will add $464,102 to the total operational cost estimate. Under the combined approach (Option 1), staffing for R1/8 is 9 FTE, already the 80% of the optimum funding advocated here, and would require no change in authorized FTE.

From a financial standpoint R1/8 management structure offers a working example of a most cost efficient organization; based on workload levels this structure could also be practical for R2 and 6; similar savings for overhead cost can be expected.

Currently R8 reimburses R1 for CR management services; regional programs are also asked to pay for CR services rendered by the R1 office. These arrangements between Regions 1 and 8 coupled with the cost recovery through charging programs for services are an efficient method of operation that has a history of working well. Other regions may have similar cost recovery practices; it is unclear if those funds are included in 2012 CR budget estimates.

Option #1: Recommended

Organization and costs are based on the current organization structure.

Staffing Model: 254.27+.6872(x)=y

Staffing Model Components a+b(x)=y

a – Open door cost (overhead)

b – Variable coefficient, this accounts for differences among offices in volume of workload and efficiency of processing activities and is calculated using measured time.

x – Workload factor, the number of request for NHPA review received annually

y – Staff hours required monthly. This number is divided by 145 to determine FTE.

Option #1 is a net change of *+ $785,580.00* over FY12 Base Funding Level

R9 workload was not assessed, cost are based on 2 FTE.

Table 1. FY 2011 Workload (WLF)-NHPA Section 106 Request

R1	*R2*	*R3*	*R4*	*R5*	*R6*	*R7*	*R8*
1450	250	900	667	835	836	380	NA

Table 2. FTE Break Point Rounding Guide (overload factor explanation pg. 35)

Fractional FTE	1.077	1.077–2.154	2.154–3.231	3.231–4.308	4.308–5.385	5.385–6.462
Whole FTE	1	2	3	4	5	6

Table 3. Model Applied using overload factor

Model a+b(x)=y	*"a"*	*"b"*	*"x" Sec-106 Received*	*"y"*	*Workload Study Fractional FTE*	*FTE Overload Factor Applied*	*FY 2012 Staff Authorized*
Region 1	254.27	0.6872	1450	1250.71	8.63	9	9
Region 2	254.27	0.6872	250	426.07	2.94	3	1
Region 3	254.27	0.6872	900	872.75	6.02	6	1
Region 4	254.27	0.6872	667	712.63	4.91	5	2
Region 5	254.27	0.6872	835	828.08	5.71	6	2
Region 6	254.27	0.6872	836	828.77	5.72	6	3
Region 7	254.27	0.6872	380	515.41	3.55	4	1
Region 8	NA				0.00	0	0
						39	19

Table 4. 2012 Base Salary+Locality +FERS Benefits+30% Source OPM 2012 GS X Step 5

	R1	*R2*	*R3*	*R4*	*R5*	*R6*	*R7*	*R8*	
GS-5	$48,637	$46,136	$48,884	$48,162	$50,848	$49,514	$47,065	NA	$50,201
GS-7	$60,252	$57,153	$60,558	$59,722	$62,992	$61,339	$58,305		$62,189
GS-8	$66,724	$63,282	$67,062	$66,136	$69,190	$67,926	$64,567		$68,869
GS-9	$73,694	$69,905	$74,069	$73,046	$77,045	$75,024	$71,313		$76,064
GS-11	$89,166	$84,579	$89,617	$88,381	$93,218	$90,773	$86,284		$92,032
GS-12	$106,874	$101,378	$106,948	$105,933	$111,732	$108,801	$103,420		$110,312
GS-13	$127,088	$120,552	$127,733	$125,969	$132,865	$129,380	$122,980		$131,175
GS-14	$150,180	$142,455	$150,940	$148,857	$157,005	$152,888	$145,326		$155,009
GS-15	$176,657	$167,570	$168,333	$175,101	$183,188	$179,842	$170,946		$182,337
FTE	*R1*	*R2*	*R3*	*R4*	*R5*	*R6*	*R7*	*R8*	*R9*
GS-5	1	0	1	0	1	1	0		0
GS-7	1	0	1	1	1	1	0		0
GS-8	0	0	0	0	0	0	0		0
GS-9	1	0	1	1	1	1	1		0
GS-11	3	1	1	1	1	1	1		0
GS-12	2	1	1	1	1	1	1		0
GS-13	1	1	1	1	1	1	1		1
GS-14	0	0	0	0	0	0	0		1
GS-15	0	0	0	0	0	0	0		0
Total FTE	9.00	3.00	6.00	5.00	6.00	6.00	4.00	NA	2.00

Table 6. Operational Cost (R1/8 budget-Source FY2011 historical records)

Step-5	*R1*	*R2*	*R3*	*R4*	*R5*	*R6*	*R7*	*R8*	*R9*
GS-5	$48,637	$0	$48,884	$0	$50,848	$49,514	$0	$0	$0
GS-7	$60,252	$0	$60,558	$59,722	$62,992	$61,339	$0	$0	$0
GS-8	$0	$0	$0	$0	$0	$0	$0	$0	$0
GS-9	$73,694	$0	$74,069	$73,046	$77,045	$75,024	$71,313	$0	$0
GS-11	$267,498	$84,579	$89,617	$88,381	$93,218	$90,773	$86,284	$0	$0
GS-12	$213,748	$101,378	$106,948	$105,933	$111,732	$108,801	$103,420	$0	$0
GS-13	$127,088	$120,552	$127,733	$125,969	$132,865	$129,380	$122,980	$0	$131,175
GS-14	$0	$0	$0	$0	$0	$0	$0	$0	$155,009
GS-15	$0	$0	$0	$0	$0	$0	$0	$0	$0
Base Need	$790,917	$306,509	$507,809	$453,051	$528,700	$514,831	$383,997	$0	$286,184
CRM Total	$3,771,998								
% of need	20.97%	8.13%	13.46%	12.01%	14.02%	13.65%	10.18%	0.00%	7.59%

Table 7. Net Change +785,580

	**R1*	*R2*	*R3*	*R4*	*R5*	*R6*	*R7*	*R8*	*R9*
FTE	9	3	6	5	6	6	4	NA	2
80% Base	$632,734	$245,207	$406,247	$362,441	$422,960	$411,865	$307,198		$228,947
2012 Base	$772,000	150,000	$166,247	$135,933	$254,663	$395,000	$217,000		$141,175
Net Change	-$139,266	$95,207	$240,000	$226,508	$168,297	$16,865	$90,198		$87,772

Option #2: All Regions are stand alone organizations with Full Funding.
Net change of + *$1,718,876* over 2012 Base Funding Level

R9 workload was not assessed, cost are based on 2 FTE.

Table 1. FY 2011 Workload Factor (WLF)-NHPA Section 106 Request

R1	*R2*	*R3*	*R4*	*R5*	*R6*	*R7*	*R8*	*R9*
893	250	900	667	835	836	550	557	NA

Table 2. FTE Break Point Rounding Guide (overload factor explanation pg. 35)

Fractional FTE	1.077	1.077–2.154	2.154–3.231	3.231–4.308	4.308–5.385	5.385–6.462
Whole FTE	1	2	3	4	5	6

Table 3. Model Applied using overload factor

Model a+b(x)=y	*"a"*	*"b"*	*"x" Sec-106 Received*	*"y"*	*Workload Study Fractional FTE*	*FTE Overload Factor Applied*	*FY 2012 Staff Authorized*
R1	254.27	0.6872	893	867.94	5.99	6	9
R2	254.27	0.6872	250	426.07	2.94	3	1
R3	254.27	0.6872	900	872.75	6.02	6	1
R4	254.27	0.6872	667	712.63	4.91	5	2
R5	254.27	0.6872	835	828.08	5.71	6	2
R6	254.27	0.6872	836	828.77	5.72	6	3
R7	254.27	0.6872	380	515.41	3.55	4	1
R8	254.27	0.6872	557	637.04	4.39	5	0
						41	19

Table 4. 2012 Base Salary+Locality+FERS Benefits, Est. (30%) Source OPM 2011 GS-X step 5

	R1	*R2*	*R3*	*R4*	*R5*	*R6*	*R7*	*R8*	*R9*
GS-5	$48,637	$46,136	$48,884	$48,162	$50,848	$49,514	$47,065	$49,384	$50,201
GS-7	$60,252	$57,153	$60,558	$59,722	$62,992	$61,339	$58,305	$61,178	$62,189
GS-8	$66,724	$63,282	$67,062	$66,136	$69,190	$67,926	$64,567	$67,750	$68,869
GS-9	$73,694	$69,905	$74,069	$73,046	$77,045	$75,024	$71,313	$74,828	$76,064
GS-11	$89,166	$84,579	$89,617	$88,381	$93,218	$90,773	$86,284	$90,536	$92,032
GS-12	$106,874	$101,378	$106,948	$105,933	$111,732	$108,801	$103,420	$108,518	$110,312
GS-13	$127,088	$120,552	$127,733	$125,969	$132,865	$129,380	$122,980	$129,042	$131,175
GS-14	$150,180	$142,455	$150,940	$148,857	$157,005	$152,888	$145,326	$152,489	$155,009
GS-15	$176,657	$167,570	$168,333	$175,101	$183,188	$179,842	$170,946	$179,371	$182,337

Table 5. Recommended Grade Structure

FTE	*R1*	*R2*	*R3*	*R4*	*R5*	*R6*	*R7*	*R8*	*R9*
GS-5	1	0	1	0	1	1	0	0	0
GS-7	1	0	1	1	1	1	0	1	0
GS-8	0	0	0	0	0	0	0	0	0
GS-9	1	0	1	1	1	1	1	1	0
GS-11	1	1	1	1	1	1	1	1	0
GS-12	1	1	1	1	1	1	1	1	0
GS-13	1	1	1	1	1	1	1	1	1
GS-14	0	0	0	0	0	0	0	0	1
GS-15	0	0	0		0	0			
Total FTE	6.00	3.00	6.00	5.00	6.00	6.00	4.00	5.00	2.00

Table 6. Full Funding $3,950,894 Net Change +$1,718,876

	R1/8	*R2*	*R3*	*R4*	*R5*	*R6*	*R7*	*R8*	*R9*
GS-5	$48,637	$0	$48,884	$0	$50,848	$49,514	$0	$0	$0
GS-7	$60,252	$0	$60,558	$59,722	$62,992	$61,339	$0	$61,178	$0
GS-8	$0	$0	$0	$0	$0	$0	$0	$0	$0
GS-9	$73,694	$0	$74,069	$73,046	$77,045	$75,024	$71,313	$74,828	$0
GS-11	$89,166	$84,579	$89,617	$88,381	$93,218	$90,773	$86,284	$90,536	$0
GS-12	$106,874	$101,378	$106,948	$105,933	$111,732	$108,801	$103,420	$108,518	$0
GS-13	$127,088	$120,552	$127,733	$125,969	$132,865	$129,380	$122,980	$129,042	$131,175
GS-14	$0	$0	$0	$0	$0	$0	$0	$0	$155,009
GS-15	$0	$0	$0	$0	$0	$0	$0	$0	$0
Base Need	$505,711	$306,509	$507,809	$453,051	$528,700	$514,831	$383,997	$464,102	$286,184
% of need	12.80%	7.76%	12.85%	11.47%	13.38%	13.03%	9.72%	11.75%	7.24%
2012 Base	$772,000	$150,000	$166,247	$135,933	$254,663	$395,000	$217,000	$0	$141,175
Net Change	-$266,289	$156,509	$341,562	$317,118	$274,037	$119,831	$166,997	$464,102	$145,009

Major Findings:

NHPA Section 106 Reviews
In the course of the analysis it was determined that NHPA Section 106 compliance reviews represent the majority of work being accomplished with assigned staff and are without exception the highest priority for CR staff. However, because most regional offices operate on an outdated presumption of staff need, they lack the proper minimum number of staff needed to accomplish the assigned workload. Functioning with minimal resources is made possible by management practices that, at best, conflict with the intent NHPA regarding section 106 compliance and, at worst, could invite an opportunity for litigation. For instance, there are cases where a field station or entire program coordinates directly with the State Historic Preservation Officers (SHPO) on a Section 106 action, This in and of itself is not an unheard of practice, but when that field station or program does not involve the CR staff or notify them in anyway, an environment for risk is created. As previously noted, the CR staff act as subject matter experts to the Regional Director according to Service CR policy, if the Regional Director is placed in a situation where expertise is rendered without the knowledge of their subject matter expert, they in turn will have no knowledge of the decision for which they, ultimately, will be held accountable. These practices have evolved out of need and in response to continued reliance on an outdated staffing premise.

Data collected through this analysis indicates CR staff in Regions 2–7 are operating well below optimal staffing levels and it is being made possible because of this aforementioned 'relaxed' NHPA compliance. My observation is this situation is causing an unhealthy level of frustration among staff, which is not normally a good basis for managing and to an extent is exploiting an unwritten policy that for some CR staff may have created a professional dilemma.

The kinds of management practices noted above are borne primarily out a lack of staff. The absence of base funding has resulted in the Service being mostly reactive in its compliance with NHPA. There is little to no ability for setting annual or longer term planning priorities, conducting proactive resource assessments, and managing daily activities effectively and efficiently. Left in this mode, the ability of the CR staff to adequately keep the Service in compliance could result in a legal action such as occurred in one Region 1/8.

Section 110 of the National Historic Preservation Act speaks to the presence of a comprehensive program for cultural resources management. Because Service CR management is almost exclusively reactionary there are few opportunities for wider management. One example of this is in the use of volunteers or the involvement of Friends groups or other NGOs to assist with cultural resources activities. In the Service there are lost opportunities in most Regions in the use of volunteers among regions because it is directly linked to the number of assigned staff. In FY 2010 volunteer hours used for cultural resources activities were 3,523, 75% or 2,626, were reported from Region 1/8. The more staff present the more ability the Service has to become proactive rather than reactive.

CR funding needs are seldom internally generated and are primarily salary related. CR staffs most important role is to react to requests for support from Service programs. The CR program, while housed within Refuges, serves most science based Service functions. In most Regions the work accomplished for non-Refuge activities is provided free of charge. Where funding is provided by Programs it is short-term and not reliable for base operations. Staff shortages cannot be mitigated with project specific funding sources.

Analysis of Historical Workload
Section 106 of NHPA requires that any project requiring Federal approval, license/permit, or involving Federal money be reviewed for its potential effect(s) on cultural resources. Any activities that might result in the disturbance or discovery of historic resources should have a Section 106 review. In 2008 there were 2961 Section 106 actions reported by regions, this number excludes R2 and R3. In 2010 there were 1827 reported including R2 and R3. While inconsistency in counting can account for some of the change, Section 106 avoidance may account for more and may also be far too common. Based on interviews with staff some believe that there could be three to four times as many Section 106 actions needed but not requested. The numbers reported annually lend considerable support to that estimation. The reason behind this avoidance is believed to be twofold; first, Service programs are not following protocols for reviews, and second, there is little time for current staff to be proactive in researching or generating program awareness of compliance requirements.

Section 106 reviews that are generated by programs are, in order of number of request received, Refuges, Endangered Species, Fisheries, and all others to a lesser degree.

Issues of Concern

- There is little or no consistency among regional offices in staff assigned, base funding, or source of funds.
- There is considerable variance among regions relative to performance-measure reports, implying a lack of basic operational capacity to report or manage the assigned workload.
- Higher priorities and assessment of program risk may also account for variance.
- The lack of dedicated funding creates uncertainty and may be compromising planning efforts.
- There is vagueness in reporting criteria for museum property; there are no indicators that address value, size, condition of items, sites, collections, or surveys conducted.

All these factors may be related to a lack of Section 106 compliance.

Assessing Risk for Museum property Management:

There appears to be little management regard for audit report findings or consequence for ignoring them. An increase in staffing that allows for some level of planned proactive management is likely to result in a much improved level of field support and overall performance related to museum management.

Although proper management of museum collections is a performance indicator for Service cultural resources and even though lack of management of these collections has resulted in several Departmental and OIG audit findings, museum property management represents a largely unfunded workload. The function is currently a collateral duty for most CR staffs. This may be because there seems to be less of an immediate detectable impact from accomplishing

little for museum property compared to processing Section 106 requests even though 106 actions can and do lead to the generation of additional museum property, e.g. archaeological excavations.

CR staffs are the best regional source of professional advice on museum property issues but their primary role is annual status reporting. There are insufficient resources for active investigating and interpreting items recovered. While the title of Museum Property Management implies a certain level of hands on responsibility it is misleading and not historically reflective of the CR services provided.

Activities associated with museum property management are primarily accomplished by field office personnel and staff at non-federal collection repositories, where most museum property resides. CR offices do coordinate annual reporting for museum property and may be available to assist with high priority management issues. They also interact with staff at non-federal repositories throughout the year.

Museum property management at the regional office level seems to be a compliance issue relative to annual reports but is a less important component of CR than Section 106 responsibilities.

Allowances for museum property management workload are included in staffing models and budget estimates.

Increasing Workload: Austere budgets are not likely to result in fewer projects or fewer Section 106 reviews going forward. In fact, the likelihood of substantial increases in workload could be the more likely scenario considering the examples below.

Reported Section 106 Reviews Received for FY2011 may be under stated by some programs although Section 106 reviews should, by law, be performed on all projects to determine if they qualify as an Undertaking under NHPA.

There is also unpredictable work such as that resulting from the BP oil spill. Using this disaster as an example, there could be a renewed emphasis from DOI for work related to contingency planning for disasters. Any planning effort, including energy and infrastructure build out will include identifying cultural resources on lands that have yet to be surveyed. This could be problematic for the Service due to its historic inability to engage in proactive work. With assigned resources CR staff in most regions has little ability to respond to a disaster.

Increased emphasis on NAGPRA could add additional work for all regions; the historical work associated with NAGPRA was *insignificant* for the measurement period but the recently completed GAO audit will require completion of inventories, reporting, and other activities that may exceed NAGPRA workload estimates included in this analysis.

Reviews of NEPA for CR impact is another function that has historically been a modest workload for CR staff; however, there are new requirements that will call for substantial attention, 1) Review of draft and final EAs and EIS for the affected environment and environmental effects sections – this will vary greatly by region. For example, R4 expects only 10–12 a year, but 30–40 for region 8 is probable based on how many EISs are in process as of December 1, 2011. 2) Coordination with and response to the appropriate SHPO, with assistance from the NEPA coordinator (e.g., consultation letters and follow through, including assistance in following up with SHPO recommendations), 3) Assistance in identifying, consulting with, and follow through with Tribal Consultation. 4) Providing scoping information for cultural resources when asked as part of internal scoping.

Modest levels of workload for both NAGPRA and NEPA are incorporated into the staffing model; however, only historical workload information was available and could be understated compared with recent emphasis.

Staffing Models and Assigned Workloads: A basic assumption of this analysis is Regional CR offices are alike except for their volumes of work. There were no discoveries during this analysis that offered any credible challenge to this hypothesis.

Regional Decision Making using Staffing Models: This workload analysis process recognizes every Region's need to prioritize and assign work, so the results poses no compromise to the way policy is implemented or how work is managed at the local level. What models do is authorize a base organization/grade structure and a transparent and equitable funding level for each. Therefore Regional independence can only be constrained by establishing organizational structures or assigning workload that are inconsistent with authorized funding levels. Regions continue to determine the most efficient methods for accomplishing assigned work. Efficiencies such as contracts, use of interns, and/or temporary staff, volunteers, etc. should be Regional options that do not threaten or compromise annual base budgets. Only substantial changes in workload volume should be reason to initiate an allocation discussion.

CR staffing models will provide a reliable management tool so as long as there are no significant changes in the mission assigned and/or organization/grade structure.

Expect immediate improvements: The recommended staffing model can be used to calculate regional staffing and funding levels sufficient to provide a localized and professional determination for compliance with Section 106 as well as other CR work assigned. Other workload is accounted for in the total staff hours measured. When CR offices are staffed according to assigned workloads the results will be improved compliance among user programs. Increased compliance rates will continually expand the Service's collective base-knowledge about its Cultural resources. The increase in recorded information will help CR staff to reduce research times, expedite reviews when necessary, better manage priorities, and provide project managers with timely information and decisions.

Section 106 Compliance Policy: A statement of current policy that both program managers and CR staff understand and endorse in coordination with State and Tribal partners would likely minimize individual discretion, improve overall consistency, and expand knowledge based decision making at a local level. As staffing and funding become more stabilized, every region's geographical knowledge-base will expand (reducing the GAP between what is known and what is not known) and help to expedite decision making while not compromising process efficiencies which are important to project managers. Regional decisions could also be more straightforwardly defended and program managers will be more inclined to accept the Section 106 process rather than view it as possibly impeding progress.

Source of Workload: Section 106 reviews consume the greatest amount of time and money; this requirement evolves primarily from projects and activities that include most of the Service's major programs.

Proactive management work (Section 110): At current staff levels this work is accomplished opportunistically or not. It includes activities such as surveys, museum property management, training and outreach, and records management. Unlike Section 106, none of these activities are program specific, but they are essential and serve the greater good for the Service's overall mission.

Funding Considerations: Partial funding could be obtained by assessing users through an internal reprogramming action using Section 106 review requirements by program. Needed funding levels could be within reprogramming thresholds allowed by the Congress and are at the discretion of DOI and the Service's Directorate. Reprogramming is a flexible funding option available; the cost to fully fund CR operations are a fraction of the amounts of reprogramming requested in the 2012 budget justification. Base funding for CR resulted from an appropriation of $247,000 in 1992 and was designated for museum property management. It appears that Refuges provides the bulk of operational funding although program users share some portion of CR operating costs; however program specific funding was not available for this report.

Summary

Because of current staffing and funding levels CR in the Service is primarily a reactive function where the majority of their workload is generated by other Service-program activities. CRM's highest priority, out of necessity, is compliance with the NHPA Section 106. This activity alone consumes a majority of available staff hours. Most other regional accomplishments and performance are simply incidental progress resulting from activities that originate through official section 106 reviews.

There is little if any consistency among Regions relative to base support or funding sources.

Success in managing the CR program priority workload has partially been made possible through relaxed compliance with Section 106.

There are currently 19 FTE authorized for eight Regional CR offices. Almost 50% of those staffs (9) are assigned to Region 1/8. As noted earlier, greater staff will lead to great performance. With only one staff member assigned to Regions 2, 3, and 7, it is unrealistic to expect much more than accomplishing some level of essential work, primarily Section 106 reviews. *The overall allocation of available resources when compared to the distribution of work points to the need for more funding and equity.*

At current staffing levels there will be little progress in mitigating audit report findings or improving levels of service available for protecting cultural resources through museum property management, continued risk of future findings and possible litigation will remain and likely expand. The 2008 OIG audit focused primarily on management of museum collections. With the current attention necessary for section 106, museum property management will only continue as a collateral duty which is primarily status reporting at the regional level. There are exceptions where direct involvement is essential such as the addition of a collection for which CR skill is considered necessary. Often, these needs are incidental to activities initiated with a properly executed Section 106. With recent GAO findings for NAGPRA it is possible that historical requirements will increase. During this analysis there was little specific information available for activities accomplished and on average Regional offices reported a historical usage of 26.5 staff hours per month expended on NAGPRA. For other museum property management activities the average staff hours reported per month was 122. These estimates combined, if considered at face value, would suggest a full-time staff person is used in every region. But, variances among regions in hours used were substantial; there is only one permanent staff member assigned in regions 2, 3, and 7.

The proposed staffing model has time for museum property management built in for every Region. Assuming full staffing, there will be sufficient time available to significantly improve management of museum property. Decisions as to how best to manage museum property within the FTE allocation and associated funding level should continue to be Regional.

This analysis establishes an objective process for staffing, organizing, and funding CR in a way that is both transparent and equitable for all regions. Only organizational or significant changes in the mission will invalidate the staffing model. Reviews of mission and workload factor volume should be performed annually. Significant changes in volume can impact the whole FTE requirement; implementation of standardized reporting criteria for this process will ensure the results remain equitable among Regions.

If the model is adopted as an allocation tool there should be no expectation that any manager would have to follow the grade structure suggested; however, if operational costs exceed an office's allocation due to organizational decisions, it should not come at the expense of other regional offices.

Workload Process – Limiting Factors for this Analysis: This workload analysis was not formally indorsed above the program level; therefore, Regional participation has been voluntary. Only in Region 3 were programs directed to report projects that could cause a section 106 review. The R3 final numbers reported, when compared with regions where reporting was voluntary, suggest numbers of projects needing section 106 review are not entirely accurate. Data collection site visits were limited to only one Region. Other offices participated via self reporting, conference calls, individual telephone interviews, and email.

Recommendations: Initial staffing and funding should be no less than 80% of calculated cost (Option #1); implementation should begin as soon as possible and an annual review should be established to determine success. Workload Factors and performance results can be evaluated after at least one full year of operations at 80%. The model can be adjusted if necessary to account for moderate changes in mission or Regional workloads. Although optimum funding for CR is the goal, it is clear that the Service is facing an austere budget climate in the coming years and that it has other priorities to meet. Investing in CR to 80% of the option #1 level shown in this study will enable the program to more effectively meet its obligations.

A starting point of 80% will: (1) allow time to evaluate the accuracy of the recommended model based on changes in relevant performance measures;

(2) allow development of an element for collecting workload data within the annual CR data call – needed to properly assess the model's capacity to estimate the FTE requirements and costs; and (3) bring Regions to a staffing level that will enable them to meet NHPA compliance needs while also managing other asset types such as museum property, historic buildings and NAGPRA materials. It will allow other Regions to realize the correlation seen in FY 10 Refuge Annual Performance Plan (RAPP) data for Regions 1 and 8 (currently operating at 80% of authorized staffing) that increased staff results in an increased ability to better meet all CR program needs. A review of results at 80% funding should include actual FTE usage, carryover funding, and regional performance reports.

Best Practices to Implement

- Establish a base staff and funding levels.
- Regions should operate at similar percentages of total funding need.
- Director's Order reminding programs of the kinds of activities that trigger NHPA compliance and the policy in place to govern it.
- Consider a cost recovery policy to pay for Section 106 review of projects.
- Implement procedures to minimize informal compliance options and to document all actions falling under the 106 umbrella of requirements.
- Issue a Director's order that requires approval of organization and/or grade structure change that exceeds final report recommendations.
- Contracts should continue at current levels as a method of accomplishing CR work.
- Expand volunteer opportunities.
- Add a sub-activity (or other identifier) to the budget structure to track CR FTE usage so it can be compared with work assigned and regional budgets. The staffing model should be reapplied at the end of the 2012 calendar year using actual data.
- Describe Section 106 responsibilities in position descriptions.
- Expand training opportunities for all programs serviced by CR and add a special emphasis or course on Section 106 procedures.
- After operational base funding is established no budget should be subject to review for implementing conservative management practices such as hiring lower grade levels or fewer FTE.
- Entry grade levels for new hires entering CR should be standard for every profession and offer an entry level grade that allows for advanced opportunities in the Service's CR program.

Operational Audit Workload Analysis Process

An Operational Audit is the workload study technique used to develop this study. An Operational Audit is a flexible management engineering work measurement method that can be used to determine staff time needed for a given activity, function, or work center. Operational audits are used as a method for establishing baseline staffing requirements for any number of functions. Results of this study can be used for establishing minimum levels of staffing based on approved organizational structures and recognizing varying levels of workload when personnel are the dominant component of cost, and mission and where basic functions among multiple locations are similar.

The Operational Audit integrates four primary techniques of data collection: Good Operator, Historical Performance, Technical Estimate, and Directed Requirement. The integration is accomplished with a mathematical concept developed using frequency of occurrence and task per accomplishment time values. The frequency of occurrence is determined based on historical data, and task per accomplishment time is established primarily through interviews with senior and other experienced staff.

The degree of flexibility makes an operational audit a very useful technique, especially when measuring multiple work centers with varying volumes of work accomplished by staff with a wide range of experience, as is the case with CRM.

Measurement Options Explained
The following work measurement techniques were all used to some degree in developing this workload study for collecting and analyzing the measurement data.

Good Operator: This is the best technique for getting unit time values because it uses the most experienced staff members to estimate real-time values to accomplish a given task. Real-time values determined using this technique are taken as representative of the time that others with similar training and skills need when doing the same work. These values determined by experienced staff are typically more readily accepted by managers.

Prior to beginning this project, it was determined that the number of year's experience of some staff was substantial and that their expert opinion was a reliable and useful source of information.

Historical Performance: This technique draws on documented past work performance and includes mistakes and inefficiencies of past operations. The fact that "it was always done that way" does not mean that staffing has been used to the best advantage or that future work should be accomplished in the same manner or under the same conditions.

It was determined that reliable historic performance data exists in local data bases as well as national reports. These sources are considered a dependable source for determining workload in a form that is sufficient in detail to be useful in measuring the actual work.

Technical Estimate: Using this technique, an analyst must rely on estimates when activity times and frequencies cannot be attained using other techniques. Technical estimates are based on the combined experience and background of the work center supervisor, the worker, and the study analyst. Some activities are made up of several sub-elements of work, each with varying frequencies and accomplishment times. It is very difficult to estimate total activity time with any degree of confidence in these situations, as this requires a more detailed approach. Following are the three primary considerations that were applied to CRM:

Tasks to be measured were reduced to the lowest activity level necessary to allow confident measurements. In this

case, tasks were broken down under 42 individual categories of work and 450 tasks.

Task frequency of occurrence was determined using local databases, except for administrative tasks, and staff experience.

Per-Accomplishment Times (PAT) was established through interviews.

Directed Requirements: This technique is used where legitimate activities and positions are required that cannot be readily measured using operational audits. The directed requirement may apply to a whole FTE, to directed frequencies such as inspections, or to directed time values such as the periodic operations of a temporary activity, usually of a limited duration. No other measurement of work is needed when a directed requirement is identified and approved by managers. Washington office, Region 9, is an example of where a directed requirement would be used.

Identifying required work: Prior to officially beginning the measurement phase of this study, a thorough review of regulations, policy statements, and various letters of authorization, fact sheets, as well as informal operational policy statements, was conducted. Tasks were identified and grouped into categories of work. The primary purpose of the review was to identify those work responsibilities that are required and common among CR Offices.

Assumed work: Assumed work is defined as work that is being accomplished where there is no directed requirement. In most cases, this work is excluded from the staffing model and provided as a possible addition to the standard measured staff hours. This process allows Service managers to evaluate the work from a responsibility position and decide if it is necessary. If the final decision is yes, managers will be able to see the costs at varying levels of effort and consider the activity in reaching a final decision. In this study no other work was found to be assumed.

Staffing models explained $a+b(x)=y$

a – Accounts for Indirect Administrative Work: There is no in-depth evaluation process used in estimating the "a" Value; records, staff experience are the source. Each CR office is credited for time that is spent on task that do not directly relate to processing a request or a specific project. Indirect tasks are administrative activities that are typical for many programs. Estimates were based on regional staff experience. Differences among regions do exist and are allowed, staff experience is the primary source for estimates. The work does not directly relate to processing a section 106 request. These tasks are simply required to administer a program.

b – Variable Coefficient – Calculated using measured hours and workload factors to account for the variance among regional offices in terms of volume.

x – Workload factor (WLF) – The WLF causes staff hours to move up or down in response to changes in the volume of work. Request received for a Section 106 Review is the selected WLF.

y – Total staff hours measured for each location (y is divided by 145 to determine FTE requirement at each location.

Advantages of Analysis Process:

- Estimating Per accomplishment times are considered very reliable because they are based on the opinion of multiple staff with varying degrees of experience; by analyzing multiple locations a range of perspectives is gained although major responsibility are very similar.
- Most efficient organizational structures can be determined, continuously evaluated, applied to all work locations consistently, and ensure equity in calculating cost and allocating budgets.
- The process reduces design/ preparation time for re-evaluating added work and can often be structured for study of other similar organizational functions.
- Similar activities can be closely evaluated among work centers to identify operational efficiencies.
- Unique workloads can be more easily identified and quantified.
- Actual operational costs can be determined for specific workloads, e.g. calculated cost by program.
- Budget allocation is simplified, equitable, and workload based.
- The staffing models can be reapplied annually to examine changes in workload levels among regions and changing funding need.
- Changes in funding (+-) can be evaluated for potential effects on defined workload.
- Staffing models can be used to predict future workload requirements.

Potential Disadvantages

This process is both time consuming and can be exhausting for staff. Every office is required to validate tasks and estimate frequency of occurrence and per accomplishment times for each. There are 42 categories of work identified for CR offices and more than 450 tasks. Staffs were required to research historical records to support their responses. Given the current staffing levels this process was a major distraction and not embraced by all.

Process/Steps Intentionally Omitted/ Limitations

The following statements are provided as clarification about the audit process as it might typically be applied in a comprehensive workload analysis. The steps discussed below were intentionally omitted because of time limitations, budget constraints, and the small size of the work centers. Although we do not believe that measurable FTE savings would have been realized had these steps not been omitted, they might have improved our application of the processes and potentially simplified data collection.

- Efficiency Review of Processes. The advantage of conducting an efficiency review prior to beginning a workload study is that improved processes can be identified, instituted, and measured. This step was not performed prior to conducting the current study.
- Most Efficient Organizational Structure. The results of an efficiency review can affect a change from an existing organizational structure to one that better facilitates and improves processes and overall management of a program function. Here again, because of time and funding considerations, coupled with the small size of the work center, no evaluation of the organizational

structure prior to beginning this study was accomplished.

- Site Visits and Data Collection: This study was limited to one site visit, R5. The accuracy of data collected is usually dependent on the analyst's opportunity to compare time values and frequencies among regions and to ensure the data requested are being interpreted and reported consistently. Regions R1/8, 4, 6, and 7 participated through conference calls, emails, telephone interviews, and otherwise self guided data collection.

Basic Steps In The Process – below are twelve steps used to analyze workload.

- Create a resource base line: In this step we identify current authorized and assigned FTE in each region. Because CR funding is not tied to a specific subactivity traditional sources used to validate historical FTE usage was not available. In this case we used the number of staff authorized.

- Validate The Mission: While the overall mission should not vary significantly from one region to the next there may be operational (workload) differences that should be defined and measured. In the first step we define similarities, then differences among locations relative to the assigned mission. This assumes that all the work has some legitimate authority that requires it to be accomplished. Unauthorized or self-imposed workload may or may not be considered; however, collateral duty assignments, "other duties as assigned" are evaluated and incorporated into the study as warranted.

- Evaluate Functions: Functions are evaluated to the extent that they are implied by the mission. These functions can be described in a way that logically links staffing and workload. This step also includes an initial assessment of the organization structure. Functions in this case are like 106 or 110 reviews, ground surveys, collecting, documenting, monitoring, repatriation, storage, etc. All functions identified should exist to some degree in every region. Collateral duty assignments could be the exception.

- Analyze the source of labor: In this step the total level of effort used in the organization is quantified and analyzed, i.e. regular staff, part-time, overtime, borrowed labor (details), contract, volunteer, or other labor. When arrayed over time there should be a relationship between the work accomplished and the labor used.

- Project the workload: Define outputs and services of the organization. This requires a review of the historical workload, typically over the prior year but always at least a 12 months consecutive time frame. In this step program variables that impact the volume of work are identified.

- Develop a staffing model: This is where linking people to workload is accomplished. This process cannot be easily defined before the steps above are complete. There is no silver bullet for accomplishing this step. However, the goal is to develop a staffing model that demonstrates a change in workload results in a change in staffing requirements.

- Discuss issues and assumptions: Throughout the process work centers are consulted.

- Compute Demand for Labor: This process requires the collection of WLFs, calculating staff requirements, and estimating cost at the Regional level.

- Identify Staffing offsets: Alternate sources of labor are described and a most efficient delivery of service is recommended, e.g., overtime, part-time, contract, and volunteers. These staff hours are excluded for model development.

- Structure New Organization: In this step the total demand for labor less offsets are expressed as whole FTE authorized at specific grade levels. Costs are calculated using step 5 of the GS pay schedule for each grade.

- Resolve issues: Outstanding issues are discussed and resolution is determined.

- Document Results

Workload Factor (WLF): NHPA Review Request Received (Section 106)
WLFs are the "x" value in a staffing model. They play a key role in the development of a staffing model. A valid WLF is used to predict a function's minimum resource requirements (FTE and Operational Cost) for various volumes of work.

The WLF is used to identify a function's Work-hour to Workload Relationship and quantify the resource requirements in terms of work-hours which translate into minimum FTE requirements at a specified level of service.

A linear equation (a+b(x)=y is calculated using historical records to estimate the minimum staff requirement for each location based on the WLF count for a specific time period. The time period may be any representative historical period, typically 12 months, or a WLF can be based on estimates of future workload with a defendable explanations.

The significant attributes of a workload factor are:

Reliability: The factor relates to FTE requirements to the extent that any change in the value of the factor produces a corresponding change in the hours to do the work.

Predictability: The value of the factor can be predicted for future time periods to make it useful as a forecasting (budget estimating) tool.

Validity: The volume of a valid workload factor cannot be controlled or manipulated by the program or work center.

Selected Workload Factors: The workload factor that best met the criteria outlined above is NHPA Section 106.

Source of Count: CR Database, historical office records, technical estimates.

Accounting for Indirect Work: Each CR office is credited for time that is spent on things that do not directly relate to processing an application, Indirect Work, but that are required none the less. So, in estimating the time expended there are other administrative activities that are inherent to office operations but are incidental to the mission. For instance, staff meetings, training, non-mission related cc mail or phone calls, or other organizational responsibilities that take staff away from the direct work of processing applications. The "a" value in the equation (a + b(x)=y represents open-the-door costs and is allowed for each work center to accomplish indirect tasks while on duty. This is sometimes referred to as fixed or open door cost.

A standard organization structure is essential for this part of the equation to be applied equitably. An "a" value exists in every office regardless of the mission or volume of assigned or accomplished.

STAFF Availability Factor: FTEs are typically paid for 2088 hours annually; however, there are times when they are not working but getting paid. For instance, holidays, leave, administrative duties, and training are times FTE may spend away from the work center. This difference is accounted for using an availability factor of 1740 hours annually or 145 hours a month.

When determining what the capability of a work center or function has to accomplish assigned work there are activities that may be directed or recognized that make people unavailable for a portion of their assigned time. Therefore, to determine the minimum essential personnel required to accomplish a level of prescribed work (calculated as staff hours required) this availability factor must be considered and is determined as follows:

Congressionally mandated work year = 2088 Hours per Year = 1 FTE

Less Holidays (10 x 8 = 80 Hours) = 2008 Hours per Year

12 Months = 167.25 Hours per Month

Less Non-available time per FTE:

Annual Leave 12.92

Medical Leave 4.26

Training .99

Organizational Duties 2.78

Miscellaneous .65

PCS Related .65

Total Non-available Hours 22.25

167.25 – 22.25 = 145 Hours Available per Month per FTE

Monthly Availability = 145 Hours x 12 mo. = 1740 Hours available per year per FTE

Overload Factors Explained

An overload factor is used for small work centers for the following reasons: the traditional rounding rule for fractional staffing is to round up when the decimal number is 0.50 or greater and to round down when less. For example, if work center "A" earned 488.345 hours per month/145 = 3.37 FTE. By applying the standard rounding rule, the result would be 3 FTEs for the work center. The fractional FTE of .37 is equal to 53.65 hours of staff work per month. The assumption is that these 53.65 hours of work could not be easily absorbed by distributing the work among three FTEs. Conversely, if the work center had 7 or more FTE, it would only amount to about 7.6 hours for each staff member to absorb the work. This makes the application of the standard rounding rule useful and fair in work centers with fewer than seven employees.

The overload factor is a protection device for small work centers and was developed by industrial engineers as an alternative-rounding rule. The overload factor is calculated at .077. This overload factor can be applied to a work center of any number of staff, but its real value is in its applicability to functions with seven or less FTE. With more employees, application of the .077 overload factor would actually produce a fractional number greater than point .50, which could inflate the whole FTE requirements and cost.

Table 7. FTE Break Point Rounding Guide

Fractional FTE	1.077	1.077–2.154	2.154–3.231	3.231–4.308	4.308–5.385	5.385–6.462
Whole FTE	1	2	3	4	5	6

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